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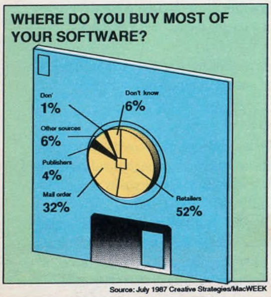


Source: July 1987 Creative Strategies/MacWEEK

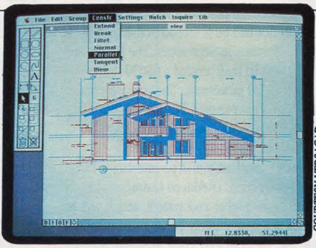
Full circle: VersaCAD comes back to Apple

Precision PC product boosts Macintosh for engineering

BY STUART SILVERSTONE
Special to MacWEEK

HUNTINGTON BEACH, Calif. — VersaCAD, maker of one of the top design and drafting software systems for the MS-DOS world, plans to release a Mac version of its 2-D product in the fall. Known as VersaCAD/Macintosh Edition, it will be priced at $1,995.

"It will be functionally very close to the PC version but written to take advantage of the Macintosh interface, with icons and pull-down menus, and to exploit the Clipboard's integration with other applications," said Paul Barr, VersaCAD's project director for research and development.



COURTESY VERSACAD

A separate 3-D package for the Mac is planned for future release, although it is currently available for the PC. Both packages are intended for use by design professionals such as architects and mechanical engineers.

VersaCAD for the Mac allows up to 250 drawing layers for separating building elements, such as dimension lines and structural, mechanical and interior design systems. The software will support floating-point line-end data for calculating rotations and angular relationships. Integer formats for quick screen-

See VERSACAD, Page 21

Images join text on Apple fax modems

BY RUSTY WESTON
MacWEEK Staff

CUPERTINO, Calif. — Apple is preparing to fan the flames of the red-hot document image-processing marketplace by introducing products for the direct transfer of text and high-resolution graphics — without a fax machine.

Experts say Apple's initial step into the $2 billion-per-year facsimile business will include a low-end, stand-alone fax modem for the Mac Plus and a workstation plug-in, 9,600-baud fax modem for the SE and Mac II. Apple hasn't announced these products, sources said, because of problems with its scanner.

Industry analysts predict Apple will score a major success in the fax business this year by emphasizing its reputation for quality graphics.

"We think a fax modem and scanner are important products because there's a worldwide fax network," said Peter Friedman, Apple's marketing manager for desktop-publishing systems.

The release of the modems may depend upon development of the scanner, which probably won't be ready by Aug. 11, the date of the Mac Expo in Boston at which other new fax products for the Macintosh will be announced.

LoDown of Scotts Valley, Calif., DEST Corp. of Milpitas, Calif., which recently bought Gulfstream Micro Systems, Intel Corp.

See FAX MODEMS, Page 21

Networking giant 3Com welcomes Mac to its PC LAN

BY RICK LEPAGE
MacWEEK Staff

SANTA CLARA, Calif. — Claiming it has finally achieved transparent integration of Macintoshes and MS-DOS computers, networking vendor 3Com Corp. will begin shipping a Macintosh module for its file-server software Aug. 3.

3+ Mac is intended to be a major part of 3Com's 3System network environment, which will allow PCs and Macs to share information and peripherals via AppleTalk, Ethernet and IBM's Token-Ring network media connected to 3Com's 3Server3 file server. It will run on the Macintosh Plus, SE or Mac II, and will be priced at $495.

See 3COM, Page 21

SIGGRAPH PREVIEW

Macintosh aims for graphics big time

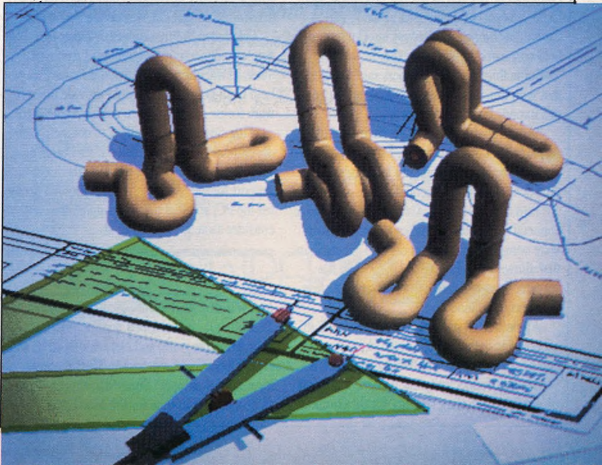
BY ABIGAIL CHRISTOPHER
MacWEEK Staff

ANAHEIM, Calif. — Three-dimensional color graphics and animation flash on the high-resolution screen in Hugh Dubberly's office. The head of Apple Computer's creative services department is experimenting with new ideas for Mac advertising, training and promotional campaigns.

Dazzling as they are, however, the images may never see the light of day. After all, it might be

Continued on Page 7

"Design Stage," a computer graphic by Som P. Khoe of the Art Center College of Design, will show at SIGGRAPH.



© SOM KHOE / ART CENTER

NeXT computers to run Mac software?

BY ABIGAIL CHRISTOPHER
MacWEEK Staff

PALO ALTO, Calif. — Macintosh applications have been spied running on prototype versions of NeXT Inc. computers, according to reliable sources.

But whether Steve Jobs' company will legally be able to offer Macintosh emulation on its computers remains clouded in controversy — like most of Jobs' mercurial career.

Running Macintosh applications on other machines requires emulating the core routines that make up the Mac operating environment.

At Brown University's computer science department in Providence, R.I., Mac applications, including MacPaint and MacDraw, have run on Masscomp's UNIX computers using the same process employed by NeXT.

But an official Apple statement issued Jan. 17, when the lawsuit filed against former Apple Chairman Steven Jobs was settled, said "Apple has the right to inspect any new computer from Jobs' new company before it can be marketed to determine if any of Apple's proprietary information or technology was used."

At the center of the controversy are two computers that will run a hybrid version of UNIX 4.2 and 5.3 and offer from 2 Mbytes to 4 Mbytes of memory, as well as a palette of 16.6 million colors.

Fax modems with rates of 9,600 baud and NFS-compatible Ethernet will be standard on the computers' motherboards. Both computers will be bundled with word-processing software from the programmers who developed T/Maker Co.'s WriteNow.

The low-end model, which will run the Motorola 68020 processor and cost $3,000 for universities will be demonstrated at the UniForum conference in September. The higher-end model will be built around a 68030 processor or two 68020 processors. The company has built prototypes around Transputer chips from Inmos Corp. of Colorado Springs, Colo., but has decided not to use that architecture.

NeXT reportedly is experimenting with a proprietary RISC (Reduced Instruction Set Chip) for its higher-end system, which will be priced at approximately $6,000. The company will use 16-inch Sony color monitors with a resolution of 1,280 by 1,024 pixels.

NeXT computers will support computer graphics that run on a dedicated-graphics bus.

In the past, Apple has defended successfully its proprietary technology through legal maneuvering. However, companies such as Phoenix Technologies in Norwood, Mass., have successfully cloned the IBM PC BIOS through reverse engineering.

NeXT also is developing a graphic interface over its UNIX operating system that supports Adobe PostScript on the screen. ■

Apple develops AppleShare network for PCs

BY CLAIR WHITMER
MacWEEK Staff

SAN FRANCISCO — As part of its effort to integrate the IBM and Macintosh hemispheres of the personal computer world, Apple has developed PC AppleShare, to be announced at Mac Expo in Boston.

PC AppleShare is the companion software to the AppleTalk PC adapter card, distributed earlier this year, that allows IBM computers to access a LaserWriter through AppleTalk. The software greatly amplifies the ability of a PC to participate on an AppleShare network.

Although it is not known whether the program will be offered as a retail product at Mac Expo, it is part of the agenda of the Apple Communications and Networking Conference, held concurrently with the expo.

Some third-party developers said they feel that with this release Apple is making dangerous inroads into their territory.

"Apple contracted us to get their card (the AppleTalk PC card) to work. Now they've cut us off at the knees," said Guy Mariande, vice president of Tangent Technologies.

Tangent, a Norcross, Ga., maker of PC-Mac connectivity products, makes a card-and-software connectivity solution called TangentShare that allows IBMs to access AppleShare file servers. TangentShare will be shipping before the expo, Mariande said.

Apple's LAN package also allows a PC to access Mac data files, use network resources and be designated as a network resource.

Though connectivity has become a big part of Apple's marketing strategy for the corporate world, some analysts said they don't expect PC AppleShare to have high-volume sales.

"It's not going to become a commodity item. The people who have IBMs who want to get on AppleShare, if they're going to have that with all the complications, they might as well switch," said Peter Ting, an analyst with Shearson Lehman Brothers in San Francisco.

PCs and Macs also can be used as equal members of a network through the TOPS network from Centram Systems West of Berkeley, Calif. TOPS allows data to be shared between PCs and Macs without a dedicated file server.

Apple's willingness to risk its relationships with third-party developers underlines its determination that the Mac connect with IBM.

Gursharan Sidhu, product manager for Apple's connectivity section, said Apple has made its intention clear since the January Seybold Conference that it would provide the software for its adapter card to access AppleShare.

Ting said Apple is willing to compete with developers who are normally allies because this type of product does not provide direct support for the Macintosh. "This product is one for the PC, and that market [Apple] does not consider sacred," Ting said. ■

CORRECTION

MacWEEK reported July 13 that SuperMac Technologies had shipped Sentinel, a data-encryption program, and Network DiskFit, an AppleShare backup program. The programs have not yet shipped. SuperMac expects them to be shipping in time for the Mac Expo.

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LATE NEWS

Updated PageMaker 2.0a compatible with Word 3.0

SEATTLE — Aldus Corp. announced shipping its updated Version 2.0a of PageMaker for the Macintosh last week.

The new version includes compatibility with Microsoft Word 3.01; the previous version of PageMaker was compatible with T/Maker Co.'s WriteNow. The updated version adds the ability to export text from PageMaker back to original WriteNow text files. Version 2.0a also has improved support for Apple's ImageWriter and ImageWriter II printers and adds a new Aldus Prep file to improve printing performance.

Customers who bought Version 2.0 after July 1 and Aldus Extended Technical Support subscribers can get the update free. Other registered users can buy Version 2.0a for $10.

Aldus Corp. is located at 411 First Ave. South, Suite 200, Seattle, Wash. 98104; (206) 628-2352.

Borland announces relational update for Reflex

SCOTTS VALLEY, Calif. — Borland International Inc. announced last week Reflex Plus, a visually oriented, fully relational update to its Reflex for the Mac database.

Reflex Plus' relational ability lets users organize data in virtually unlimited ways, the company said. "In a customer database, you may have a separate file for each customer and for each product. You can relate the product file to a customer by linking them," said a Borland spokeswoman.

Reflex Plus includes 55 built-in functions, including artithmetic, statistical and financial functions. It will be priced at $279 and will ship in the third quarter. It is not copy protected.

E-Machines working on color monitor

TUALATIN, Ore. — E-Machines is close to making the leap from monochrome to color monitors, according to Steve Vollum, company president. The company is working toward the debut of a new color monitor for the Mac II, he said. Also late last week, E-Machines got its new monochrome controller for the Mac II out the door.

The new color monitor will not be shown at Mac Expo but, said Vollum, because of "strategic considerations, the company is trying to come out with the monitor as soon as possible."

The controller costs $1,995 with E-Machines' Big Picture monitor and $795 on its own.

E-Machines is located at 7945 S.W. Mohawk St., Tualatin, Ore. 97062; (503) 692-6656.

“Best of Category”

SuperSpool
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“…the real gems in the SuperMac collection.”
— MacWeek

SPOOLERS:

“…the most complete and well-designed spooler available…”
— Jim Heid, MacWorld

“…the spooler of choice for the Macintosh Publisher.”
— Publish! magazine

“…clearly the winner…the outstanding choice…wins on features, speed and stability.”
— Howard Bornstein, The Macazine

“The speed at which SuperLaserSpool returns control of the Mac to the user is impressive, in some cases even astonishing.”
— Rick LePage, MacWeek

- **SuperSpool** (for ImageWriter I and II): $74.95
- **SuperLaserSpool** (for all Apple printers): $149.95
- **Multi-User SuperLaserSpool** (for up to 5 users): $395.00

System requirements: Macintosh 512e, Plus or SE.

BACKUP:

“★★★★½”
— MacUser

“Even though I have been preaching the virtues of backing up files for years, I rarely take my own advice… It took DiskFit to get me to back up on a regular basis.”
— Michael Wesley, MacUser Magazine

“…I found religion. I now practice what I preach by regularly backing up my files. On the Macintosh, I use DiskFit…”
— Lawrence J. Magid, Los Angeles Times

- **DiskFit** for HFS hard drives: $74.95

System requirements: Macintosh 512, Plus, SE, or Macintosh II with one or more HFS-format hard disks.

SUPERMAC SOFTWARE

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Apple admits memory shortage

BY C. J. WEIGAND
Special to MacWEEK

CUPERTINO, Calif. — Apple Computer Inc. has told some of its dealers to expect an eight-week delay in receiving the 1-Mbyte single in-line memory modules (SIMMs) for the Macintosh SE and Mac II. According to a few dealers, Apple has suggested they buy 1-Mbyte SIMMs (using 1-Mbit chips) directly from Dove Computer Corp.

"Apple has been using our SIMMs for some time now and they've been completely satisfied," said Rick Greene, Dove's vice president of sales and marketing. "They've been recommending our products to developers as well as to direct and dealer accounts.".

Apple's customer relations department said distribution of Apple's 1-Mbyte SIMMs to dealers will be restricted for several weeks because of limited quantities.

Dove's SIMMs consist of surface-mount CMOS chips designed to expand the internal memory of the Macintosh Plus and SE to 4 Mbytes and the Mac II to 8 Mbytes.

Dove's modules are interchangeable among the SE, Mac II and Mac Plus. Dove and Apple each offer a 2-Mbyte upgrade kit using the new 1-Mbyte SIMMs. Using the kit creates 2.5 Mbytes of continuous memory by replacing two of the four original 256-Kbyte SIMMs with 1-Mbyte SIMMs in a Mac Plus or SE. Both kits carry a retail price of $999. Dove also offers a 4-Mbyte upgrade kit for $1,999 and an 8-Mbyte kit for the Mac II for $3,998.

At least one other vendor is shipping surface-mount SIMMs for the Mac SE and Mac II. Open Mac Enterprises of Concord, Calif., offers 2-Mbyte kits for $699 and 4-Mbyte kits for $1,199.

"We offer substantially lower prices than other distributors, including Dove, because we don't sell to an installed dealer base," said Adam Lazare, executive vice president of Open Mac Enterprises. "All our sales are made by mail order, cutting out the middle man."

Open Mac Enterprises products carry a two-year warranty.

Dove Computer Corp. can be contacted at P.O. Box 7008, Wilmington, N.C. 28406; (919) 763-7918.

Open Mac Enterprises is at 140 Mason Circle, Concord, Calif. 94540; (415) 682-0440. ■

Apple may be drawn into printer price war

BY ELINOR CRAIG
MacWEEK Staff

The introduction of TurboLaser/PS printer by AST Research Inc. of Irvine, Calif., at $3,995 is the first in a round of laser printer price cuts that may soon involve Apple, said Peter Ting, industry analyst with Shearson Lehman Brothers Inc. of San Francisco.

"In a couple of years they [laser printers] will cost only $1,000," he said.

The PostScript-equipped AST printer costs $1,800 less than Apple's equivalent LaserWriter Plus. "Apple's response to the market challenge will be to drop the price. They always do," said financial analyst Bret Maxwell of First Analysis in Chicago.

Others are not so sure Apple will take a defensive position, though. "Apple has always presented itself as a high-quality vendor that does not have to respond to other company's products," said Doug Cayne of the Gartner Group in Stamford, Conn. "They will probably wait and see if the AST printer sells and if it actually cuts into LaserWriter profits before they respond with any action."

Apple declined to comment.

"Apple generated a huge profit margin [with the LaserWriter]. They had a captive market," said Ting.

"I don't expect it to hurt Apple that much," said Maxwell. "They will make up in volume sales what they lose on price-tag numbers."

Other low-end laser printers are waiting in the wings to challenge Apple's first-place status. Tandy, based in Fort Worth, Texas, is expected to announce a competitive laser printer, but it may not include PostScript. Adobe Systems Inc. of Palo Alto, Calif., says it does not have a contract with Tandy.

Wang of Lowell, Mass., DEC of Maynard, Mass., and QMS Inc. of Mobile, Ala., also are rumored to be announcing competitive PostScript printers.

Ting said speculation around the possible price war rests on the strength of the AST TurboLaser/PS. "The eight separate page-per-minute capacity and the Ricoh 4081 engine make for strong competition," he said

The TurboLaser/PS includes an AppleTalk port and works with any host computer. It has 3 Mbytes of RAM and 1 Mbyte of ROM, a substantial increase over the Apple LaserWriter Plus' 1.5 Mbytes of RAM and 1 Mbyte of ROM driven by a Canon CX engine. ■

COURTESY AST RESEARCH INC.

SNAPSHOTS

SoftView program lets managers track Macs in use

CAMARILLO, Calif. — SoftView Inc. earlier this month released a network version of MacInUse, a program that allows microcomputer managers to track the use of Macintosh computers in their organizations.

The new version is compatible with AppleShare, TOPS, MacServe and other networking products and allows data from various workstations to be gathered into one file.

The $79 program runs in the background and works with the entire Macintosh line. Site licensing is available.

"We have found that employees of corporations are using the data gathered from MacInUse to justify the purchase of additional Macintosh hardware and software," said Susan Morgan, SoftView's president.

MacInUse 2.0 can be used to track use of applications and machines because the program records the application name, date, start time, duration and any additional user-defined information in a data file.

For example, MacInUse can keep records for tax purposes, follow progress of students fulfilling course requirements, track time for companies renting time on Macintoshes or LaserWriters or maintain records of work done for different clients or jobs.

Used on a network, MacInUse can be customized by the network administrator to track the user's name along with workstation data. An information screen also can be customized to prompt users for additional data.

SoftView Inc. is located at 4820 Adohr Lane, Suite F, Camarillo, Calif. 93010; (805) 388-2626.

Update software permits electronic distribution

DEL MAR, Calif. — A new strategy for exterminating Macintosh software bugs has been devised by Paragon Concepts Inc. The company recently released two application programs to help Mac software developers and publishers easily distribute updates and bug fixes to users.

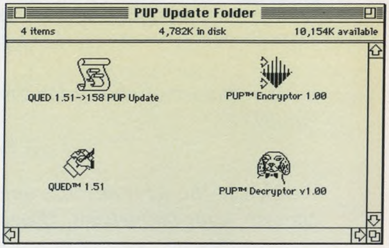
Called PUP, the Paragon Update Procedure, the system involves two programs: the encoder and the decoder. The encoder is available to software developers for $195.

The encoder creates a file containing the update changes to specific programs. The file is then encrypted so it can only be read through the companion decoder, distributed free through normal retail and electronic channels.

Because only users with both the decoder and the original software can use the encoded file, updates can be distributed through user groups and bulletin boards, eliminating the need to mail a new disk to all registered users. This saves the publisher both time and effort and ultimately reduces the software cost for users, Paragon said.

In addition to facilitating the distribution of upgrades, the program also can be used to post messages to users on public networks.

Paragon Concepts Inc. is located at 4954 Sun Valley Road, Del Mar, Calif. 92014; (619) 481-1477.



IBM PC files accessible through QuickShare

BOULDER, Colo. — Compatible Systems Corp. has announced QuickShare, a product that allows a Macintosh to directly access the files on an IBM PC or compatible.

CSC President Matt McConnell said QuickShare includes a Mac-compatible SCSI interface for the IBM PC, plus cable and software to link a Mac directly to the PC. The Mac can then directly access the files on any of the PC's disks.

"Nobody does disk sharing quite the way we do," McConnell said. "We're trying to make a one-stop fast solution to the problem."

The QuickShare board transfers information at 1.4 Mbits to 4.2 Mbits per second, depending on the model of Mac being used.

QuickShare can access PC storage devices, too, said McConnell. QuickShare has a file-transfer storage program that allows the Mac to read and write files from anywhere on the PC system. For example, Microsoft Excel can read Lotus 1-2-3 files.

Text and graphics also can be converted to MacWrite or MacPaint formats with QuickShare, McConnell said.

QuickShare will ship in mid-August, said McConnell.

Compatible Systems can be contacted at P.O. Drawer 17220, Boulder, Col. 80308; (303) 444-9532.

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Mitsubishi introduces 37-inch, high-resolution color monitor

BY CLIFF LEHMAN
MacWEEK Staff

TORRANCE, Calif. — Far bigger than a breadbox and not much smaller than a piano, the granddaddy of all big color monitors is shipping.

It's the XC-3710 from Mitsubishi Electronics. The gigantic monitor is the world's first 37-inch, high-resolution, auto-tracking color monitor, the company said.

The XC-3710 is Mac II-compatible, but the necessary cables will not be available for a few months, according to Paul Paulsen, a company spokesman. Priced under $8,000, the XC-3710 is available through Mitsubishi's nationwide network of distributors and to OEM customers.

The 37-inch CRT has an actual viewing area nearly two-and-a-half times larger than a 25-inch monitor. According to the company, it can display a two-page newspaper spread edge to edge on the screen.

Although the oversized monitor weighs 286 pounds without its base, the company said, "The slim design of the XC-3710 does not occupy much space."

But at 35 inches high by 40 inches wide by 29 inches deep, the monitor is certain to dominate all but the most expansive offices. The base alone measures 28 inches high by 40 inches wide by 23 inches deep and weighs 121 pounds.

The XC-3710 is being purchased for office automation, presentation graphics, training, teleconferencing, merchandising display, public information service media, CAD/CAM and industrial process control, according to Mike Foster, Mitsubishi vice president of sales.

The screen delivers horizontal resolution of 640 dots and vertical resolution of 480 lines.

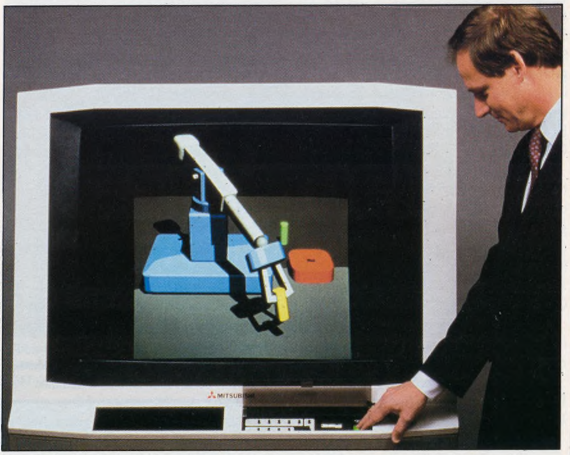
"With such a massive screen, the XC-3710 has unlimited applications and provides an effective alternative to video projection," said Foster. Because it is a CRT, the monitor can be viewed from any angle.

"I can't imagine where someone would use this monitor for personal applications," said J. Swartz, general manager of 4Site Technologies of Santa Cruz, Calif., a computer graphics software company. "It's better viewed from a distance, but its value is you can get a lot of people around it."

The monitor's auto-tracking circuitry allows the XC-3710 to lock onto any horizontal frequency from 15 kHz to 35 kHz and any vertical frequency from 40 Hz to 75 Hz. The XC-3710 accepts input signals from TTL, analog or television-type NTSC.

Depending on the input mode or graphics board used, the XC-3710 can display eight, 16, 64 or virtually infinite color requirements.

Mitsubishi Electronics America Inc.'s Computer Peripherals Division is located at 991 Knox St., Torrance, Calif. 90502; (213) 515-3993. ■



COURTESY MITSUBISHI ELECTRONICS AMERICA INC.

Mitsubishi's 37-inch XC-3710 has a viewing area nearly two and a times larger than a 25-inch color monitor.

Programmers discuss how to improve Macintosh file transfer

BY CLAIR WHITMER
MacWEEK Staff

SAN FRANCISCO — The programmers gather, the tension rises, ideas fly back and forth high over the heads of the rest of us, and the debate continues until a new standard is born.

In the computer industry, this scenario is not unusual; the difference with this session, however, is that the conference took place online in an effort to improve on-line technology, specifically the Mac file transfer.

Stirred by the proliferation of new software and a shared awareness of the old version's limitations, a group of leading telecommunications programmers decided the time had come for a new version of MacBinary. An on-line "conference" was called June 21 on CompuServe and another for the following week. Representatives from Delphi Technologies Corp. and GEnie Systems Inc. participated.

First developed in the spring of 1985, MacBinary was a routine created to help transfer Mac files. Now incorporated in most telecommunications programs, MacBinary takes the sender's data and creates a "header" with information from the Finder about the file, assembles the different components of the file and links them together in a sequential package. The receiving computer then restores the data to its original Macintosh format, complete with icon information.

Before MacBinary, each downloaded file had to be run through a separate application called BinHex to convert what looked like gibberish on the screen into a usable file. With MacBinary, files would be transmitted in one comprehensible piece, although the routine itself is not an error-checking protocol.

MacBinary II is intended to make the process even more dependable. For example, with MacBinary II if the program being sent is an installer program, double-clicking on the icon will tell the computer whether to use the system on the hard disk or the one included with the program.

The programmers also made adjustments for the newer networking abilities of the Macintosh. The routine can now distinguish more accurately between IBM and MacBinary files. Space also was left in the MacBinary header for extra information that might be required for future Apple systems.

According to Don Brown, one of the programmers involved, by the end of the June conference a decision was reached that the time had come to sharpen such fine points. New versions have been planned for many of the telecommunications programs, and the programmers wanted MacBinary II to be included in as many as possible.

Since the exact release dates of many of those programs are unknown and since a new standard cannot be created overnight, MacBinary was carefully structured so that files sent from a program with the new version can still be received by a program with the old version.

Brown says although the file format has already been agreed upon, the exact wording of the application proposal is still being finalized. The first program that will incorporate MacBinary II will be FreeTerm, the public domain software from Dreams of the Phoenix of Jacksonville, Fla., distributed in part by the Apple Programmers and Developer's Association. The program should be available by the end of this month.

According to Chris Allen, president of Dreams of the Phoenix, the next version of Red Ryder, a shareware telecommunications program from FreeSoft of St. Louis, also should use the new version. ■

AI applications get down to real business

BY JIRI WEISS
MacWEEK Staff

SEATTLE — The database contained everything anyone would want to know about the paintings of Vincent van Gogh — even the images of the paintings themselves. To demonstrate, Daniel P. Flickinger, a researcher at Hewlett-Packard's Distributed Computing Center, typed: "Show self portraits."

The HP 9000 workstation's green light blinked as it translated the natural language command into SQL, a database query language, and then searched the attached laser disk. In seconds, a series of familiar van Gogh images popped up on the screen.

"Let me try," I asked and typed: "Did van Gogh paint any boats?"

But instead of retrieving the data in seconds, the workstation chugged away for one minute, two minutes, three minutes.

"It is taking its time because it is searching for paintings first and then for boats," Flickinger said and hit the reset button.

The inability of the HP system to handle a simple query illustrates the types of problems still plaguing natural-language understanding systems.

Nevertheless, the Sixth National Conference of the American Association for Artificial Intelligence (AAAI), held here in mid-July, showed that AI applications, especially expert systems, are being used to do real business.

Boeing Aerospace took advantage of the show's visit to its home city to showcase its advanced AI applications. Important new products were rolled out by Texas Instruments of Dallas, Symbolics Inc. of Cambridge, Mass., and others. And for the first time at an AAAI conference, there were a significant number of Macintosh products.

Despite that, conference attendence was down 20 percent, to around 4,500, from 5,400 in 1986. Some blamed it on the location or on corporate budgets, but others said the figures are an indication that business has become tired of AI hype.

"AI has not delivered," said Larry Geisel, president and CEO of an AI company formed 10 weeks ago to deliver PC- and, perhaps, Mac-based AI applications.

"The problem with the AI industry is that it has not been market-driven, he said. "Virtually all the companies have been founded on the basis of some academic clique with research directors who have had little experience in business."

With one foot planted firmly in academia, AI has been slow to come to the Macintosh.

"A lot of people are taking a wait-and-see attitude," said Steve Weyer, research scientist in Apple's AI systems group, who attended the conference. For AI, the Mac model of choice will be the Mac II, which is not shipping yet in large quantity.

What could give the Mac a boost as an AI platform would be the development of an add-in board to process LISP, a language used for AI development that taxes the memory and processing resources of ordinary computers.

Texas Instruments raised the possibility of developing such a board at the introduction of its new 32-bit Very Large Scale Integration (VLSI) chip. The TI chip packs more than 553,000 transistors on a 1 centimeter-square area, about 2.5 times more than a Motorola 68020, according to TI.

The chip will not be sold as an off-the-shelf product, but it is available on a $20,000 NuBus add-on board as an upgrade for users of earlier Explorer models, said Neil McGlone, a TI spokesman. Making a Mac II add-on board would not be difficult. "We are talking to Apple and looking for third-party developers."

But the Mac showed promise even without the LISP processor.

A crowd besieged the booth of Neuron Data, publisher of Nexpert Object, an expert system written in C for the Macintosh II and other workstations.

Coral Software Corp. of Cambridge, Mass., introduced Coral/Franz Extended Common LISP, a more complete version of Common LISP than has been previously available (see sidebar). "This should make LISP code more portable," Apple's Weyer said.

ExperTelligence of Santa Barbara, Calif., demonstrated ExperTelligence's ExperInterface builder, which can be used to build a graphical interface for Mac applications. "That will interest my customers," said a salesman who sells Macs to the government.

Some corporations do take AI seriously, including AI on the Mac. Boeing Aerospace Co. bused hundreds of attendees to show off its 100-person Boeing Artificial Intelligence Center. Boeing decided to emphasize AI research in 1982, when the company carried out a study of what business would be like in the year 2000, according to George Roberts, the center's general manager.

One application, an expert system running on MicroVAX II from Digital Equipment Corp. of Maynard, Mass., is speeding up assembly of connectors. In the past, employees have spent an average of 45 minutes looking up what types of tools they should use in 20 different specifications manuals. Now important specifications have been input into an expert system written in Prolog, called CASE. The look-up procedure now takes only five minutes, according to Bill McClay, an AI specialist who designed the system.

Boeing also is developing a Mac Plus-based expert system that will be used for diagnosis of problems on the company's new 747-400 jets, a source within Boeing said. The company spends 24,000 man-hours to develop huge fault trees for the aircraft. "With the expert system, that number has been cut in half," McClay said.

Such microcomputer applications are "valid," said Edward Feigenbaum, a professor at Stanford University in Palo Alto, Calif., and a leading figure in AI research. But Feigenbaum cautioned companies should not limit their applications to low-end machines.

"The way people think is limited by the tools they use. If they have binoculars instead of a telescope, they may miss the rings of Saturn," he said. ■

MARK JOHANN

Hewlett-Packard's natural-language system translates questions written in English into SQL queries. The database of the HP workstation at the conference contained data about Vincent van Gogh, including his art.

SE, II open architecture spur AI development

BY JIRI WEISS
MacWEEK Staff

SEATTLE — The open-architecture Macintosh SE and Mac II are spurring new artificial intelligence software, according to vendors who attended the AI conference here recently.

Three products highlighted a group of Macintosh AI entries demonstrated at the show.

Developers of AI applications on high-end LISP machines can now port them much more easily to a Macintosh with the Common LISP interpretive language announced at the show by Coral Software.

Applications developed in Common LISP on any machine, including workstations from Symbolics Inc., Sun Microsystems Inc. and Apollo Computer Inc., will run on the Mac with little modification, said Andrew Shalit, a spokesman for Coral.

The $400 Coral/Franz Extended Common LISP is a full implementation of Common LISP and takes up less than 1 Mbyte of RAM. It starts shipping this week. The Coral/Franz LISP includes an integrated EMACS editor and a programmable text editor. A $99 version with reduced capabilities also will be available.

ParcPlace Systems released Version 2.2 of its Smalltalk-80 object-oriented programming language.

Version 2.2 is designed for greater portability between different platforms, according to ParcPlace Systems. To achieve this, Smalltalk-80 is divided into two parts: a machine-dependent portion and a machine-independent one that includes the language, run-time system and user interface. The new version of this object-oriented language supports PostScript and RS-232 ports. It runs 2.5 times faster than previous versions and adds access to Desk Accessories and the ability to cut and paste between Smalltalk-80 and the Mac Clipboard. It also supports color displays and 54 type fonts, according to the company.

Proponents of Smalltalk said this approach allows a programmer to be 10 times more efficient, especially when building simulations.

A basic Smalltalk-80 programming environment retails for $695, or $995 with the enhancements.

Softsync Inc. introduced the Macintosh version of Super Expert, an expert system based on examples rather than rules.

Users enter relationships consisting of conditions that have to be met for a particular outcome into spreadsheet-like cells. In effect, users build a table of all the possible outcomes. The computer uses the table to ask users questions and then make a recommendation.

The $199 Super Expert runs on Macintosh models from the Mac 512KE up.

"If you have six different criteria [for a particular outcome] and two possible values, 'yes' and 'no,' then the number of examples you enter is 64," said Jeff Higgins, Softsync's software development manager.

Each program will handle 30 criteria and 200 examples, but expert systems can be chained, Higgins said. "You are only really confined by the disk space."

Coral Software can be reached at P.O. Box 307, Cambridge, Mass. 02142; (617) 547-2662.

ParcPlace Systems is located at 2400 Geng Road, Palo Alto, Calif. 94303; (415) 859-1015.

Softsync Inc. is at 162 Madison Ave., New York, N.Y. 10016; (212) 685-2080. ■

Apple shows its 3-D stuff at SIGGRAPH

Continued from Page 1

difficult to explain why graphics meant to showcase the abilities of the Macintosh II have been generated on a high-end Iris workstation from Silicon Graphics of Mountain View, Calif.

Dubberly is quick to point out that his use of the Silicon Graphics machine is purely experimental, but it illustrates Apple's dilemma. Until the introduction of the Mac II, Apple did not have the power, high-resolution display and third-party support to generate its own 3-D color images. Apple's goals include overcoming technical professionals' attraction to the UNIX world and encouraging major graphics vendors to port their UNIX software to the Mac II via A/UX and, eventually, to write directly to the Macintosh operating system. Now Apple has a computing platform that begins to address the needs of the professional graphics market.

Supported initially by graphics software such as Dimensions from Visual Information Inc. of La Puente, Calif., and several programs from MacroMind Inc. of Evanston, Ill., the Mac II will soon be able to offer highly sophisticated computer graphics in its own right. Although Silicon Graphics reigns high with its 3-D workstation platform, companies whose software already runs the SGI systems want to move to the Mac II.

That shift in the market is evident at this year's SIGGRAPH, the premier computer graphics show. For the first time, Apple is at SIGGRAPH in a big way.

But can the Mac II take on some of the workstation vendors? What does Apple need to do to compete in computer graphics and technical markets? How much will the company have to rely on its UNIX (A/UX) and Ethernet support for the Mac II? Will the standard Macintosh operating system win over engineers, architects, drafters and technical publishers? How many CAD developers will port their software to the new Apple computers? Is the Mac II powerful enough for technical users?

Apple's 30-by-30-foot booth will be packed with 17 Macintoshes, more than half of them Macintosh IIs; several third-party color monitors; and software for a target user base Apple refers to as the "technical professional."

As if to answer these questions, David Kulbarsh, Apple's technical marketing programs manager in the scientific and engineering division, said: "We already have a pretty good installed base in engineering areas. Between 5 percent and 12 percent of the million installed Macs are used by technical professionals — architects, draftsmen, software programmers."

However, Apple has a lot of catching up to do in the high-end graphics world before it will be able to generate images comparable to those produced on systems from Apollo Computer Inc. of Chelmsford, Mass., and Symbolics Inc. of Cambridge, Mass.

Experienced Macintosh programmers are anxious to bring such sophistication to the Mac II. Marc Canter of MacroMind, developer of several graphics programs for Macintoshes, including VideoWorks II and GraphicWorks 1.1, is porting high-end 3-D software to the Macintosh II from platforms like Digital Equipment Corp.'s VAX machines. Canter is working with the Computer Graphics Lab at the Massachusetts Institute of Technology to bring sophisticated 3-D graphics effects like rendering, shading, ray tracing and light models to the newest Apple platform.

Alias Research, a $17-million 3-D animation and modeling software company in Toronto, has exploited the Silicon Graphics Iris workstations for the past two years. Now the company is anxious to port its software to the Mac II. Having won contracts with General Motors, Kraft Foods, Revlon, Motorola and Boeing, Alias says it has a lot in common with Apple.

Art Bell, vice president of marketing for Alias, said: "We perceive the Mac II with its (68020) CPU as a low-end workstation. Alias has an affinity with Apple because of our user interface. Our aims and Apple's are similar. We have a tightly coupled design and 3-D system that requires graphics support. Apple has a strong user interface that would add value to our software. It should be easy for us to port our software to the Mac II. The Mac II is the right price, the right size, but Apple needs to make a commitment to the animation and design worlds."

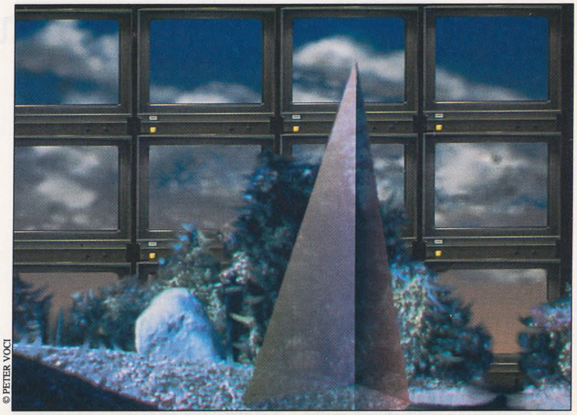
Kulbarsh said: "Apple's strategy is not to go with a single vendor for a particular application. What we've done is divide engineering into six markets: general drafting, architecture/engineering/construction (AEC), mechanical engineering, electrical, software development and scientific.

"The goal is to develop a range of solutions in all the different markets by developing relationships with third parties in hardware and software," he said.

In response to questions about the competitive workstation market, Kulbarsh said: "We don't typically compare ourselves to the Sun 3/50 (Sun Microsystems Inc.'s $5,000 system) because it's not an open system. The Mac II is an open system with six slots. The 3/50 is a closed machine with a limit of 4 Mbytes of memory. We look at the Sun 3/110 LC as our competition. We view them as roughly comparable machines. Both have the same CPU, a 68020 [chip] and floating point 68881. But the 3/110 LC is about $20,000.

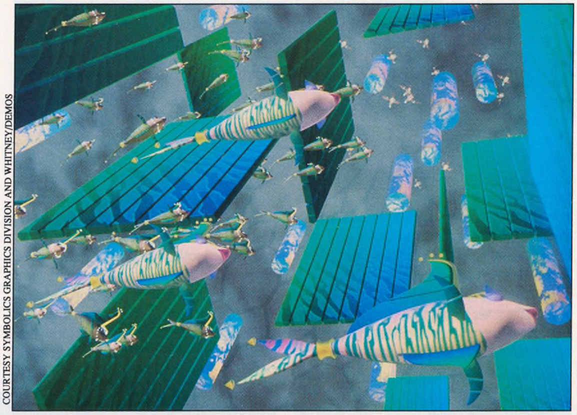
"A Mac II with a SuperMac or a PCPC II 1,024-by-1,024-pixel color monitor, 4 Mbytes of memory, 80 Mbytes of storage, six slots, 40 Mbytes of tape backup and A/UX would cost about $18,000. A Sun 1/110 LC with a 1,024-by-1,024-pixel high-resolution color monitor, 4 Mbytes of memory, a 70-Mbyte disk, three slots, 80 Mbytes of tape backup, Ethernet and UNIX is about $21,900."

Sun's vice president of research and marketing, Bill Jay, did not agree with Apple's analysis: "The Mac belongs in the retail channel. Buying a Mac is like buying a stereo. Apple can't throw money at the engineering market problems and expect to sell the Mac II there. And developing UNIX (A/UX) for the Mac is a mistake." ■



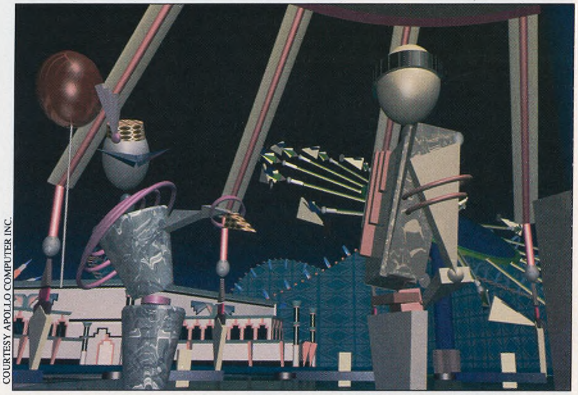
© PETER VOCI

"Displayscape," an original computer graphic by Peter Voci of the New York Institute of Technology, will premiere at the SIGGRAPH art show. Voci created the picture using software from Computer Graphics Lab Inc. on a DEC Micro-PDP 11 computer.



COURTESY SYMBOLICS GRAPHICS DIVISION AND WHITNEY/DEMOS

The film "Stanley and Stella in Breaking the Ice" includes scenes in which as many as 160 birds and fish are simulated on Symbolic Inc.'s 3600 series workstations. The character animation was achieved by using new surface texturing techniques with Symbolic's paint and animation software. The film was jointly produced by Symbolics Graphics Division and Whitney/Demos, both of Los Angeles.



COURTESY APOLLO COMPUTER INC.

This scene from "Fair Play," an entry in the the audio-visual show at SIGGRAPH, demonstrates the capabilities of 3-D graphics software. The effects in the three-minute, computer-animated film were calculated using raytracing software. Raytracing creates images by tracing the path of each ray of light from the source to the viewer. Michael Sciulli of Apollo Computer Inc. directed and produced the film.

Mac fanatics flock to Apple business forums

BY JIM BEAVER
Special to MacWEEK

ANAHEIM, Calif. — Gilbert Lehmann looks around the cavernous, crowded convention ballroom at the Anaheim (Calif.) Hilton & Towers. He whistles softly. "Apple sure spent a lot of money, didn't they?" he says.

He's probably right. Apple's business forums have been sprawling over the mezzanines and conference-room floors of hotels across the country throughout the summer. The centerpiece of the forums is the business expo, which fills a large convention room. About 50 vendors are spaced around the room like crap tables at a Las Vegas casino, and just like at a casino, different tables get crowded as people seek out the hot new products.

Seminars, application showcases and hands-on sessions are held in adjacent, smaller rooms. The seminar subjects include all the usual suspects: desktop publishing, communications, accounting and business management, engineering and productivity.

If forum-goers have a complaint, and not many do, it's that the hands-on sessions are too crowded and difficult to get into. Apple says it expects 23,000 people to attend this summer's 16 forums.

Just how much money Apple spends on its business forums is a closely guarded corporate secret. In any case, according to Apple, the forums are not in business to make money — at least not through ticket sales. But as a direct result of last summer's forums, Apple says, dealers' sales increased significantly.

However much Apple spends on the forums, it is not helping Shelley Antonissen as she stands on her tiptoes trying to see through a crowd to a screen 6 feet away. Antonissen says she has not had much luck at several other exhibits either. "It's pretty busy," she says. "It's hard to get someone to talk to."

Apple started the forums in response to demands from companies for more information about the range of hardware and software solutions for common business problems. The forums are designed to give business people a "one-stop" opportunity to check out products.

But the question of whose products they will get to see has caused some controversy. Several firms have been "disinvited." (See MacWEEK, June 22.) And others — who prefer to remain unidentified — have dropped out because of the lack of "a good sense of a marketing plan."

The forum is a two-day affair: Day one is for VIPs and the press; day two, says one businessman, "is for us humans." Who exactly are the "VIPs"? They are selected business customers of the local dealers who co-host the forums, and they get free access to the keynote speaker — Apple CEO John Sculley spoke in Anaheim — plus mounds of free food for lunch. "Us humans" miss out.

Apple's brochure for the forums shows two men. One is saying, "Everyone's telling me our business will do better with computers. But no one's telling me how or why."

Nonetheless, despite the implication that the forums are aimed at beginners, MacWEEK found few, if any, computer neophytes at two forums it attended. Most forum-goers are bona fide Mac fanatics who have already seen most of the software at the expo but who would rather eat an accelerator board than miss an Apple exhibit.

Neil Tootill is a software developer who has 20 Macs in his shop, but he says, "I just had to see the Mac II. I happened to notice the advertisement and just had to get over."

Doug Jones teaches sixth grade in the San Juan Capistrano, Calif., school district, but during summer vacation he is "Mac Wizard," a computer doctor who has made it his personal crusade "to get Macs into people's laps."

Today he is shepherding some engineers from Larmor Construction and Development around the forum. Although the company has several Macs already, a renegade band of accountants and property managers are pushing for PCs. Jones takes this as a personal affront. He says he would love to talk about it, but he's got to hurry the engineers to another seminar.

Another type of forum-observer is the Mac user who works at a company with a preponderance of PCs. Michael Wright works for Holiday Inn, whose accounting and reservation systems are on IBM machines. Wright has a Mac Plus at home and considers himself on a mission of sorts, gathering ammunition for a Mac assault on his boss.

Other folks appear simply to have gotten the day off to attend the forum and are out for a good time. One such group is standing around a vendor, listening to a screeching monkey startup sound and laughing uproariously.

Still, the bulk of the crowd is made up of the very people Apple wants most to attract: Mac users or potential users with specific problems in search of solutions.

This includes Lehmann, a professor of refrigeration and air conditioning at Long Beach (Calif.) City College, who is looking for a program that pertains to cooling loads.

"I went to the engineering seminar, but I didn't find what I wanted," he says. "IBM has programs in the area; Apple doesn't yet."

Lehmann's son, Lyndon, a recent industrial technology graduate, walks over. A hands-on session he wanted to attend was "impossibly crowded," he says. He couldn't get near it, so the two discuss what they have seen so far.

Curtis Hugo of Creative Challenge (center) uses a Macintosh at a hands-on session at an Apple business forum. The forums include exhibits and application showcases.

DOUG MENUEZ

When Lyndon hears about his father's failure to find a cooling-load program, he says, "People are waking up to Macs. There'll be some programs. It's just a matter of time."

"It's kind of mind-boggling," his father says, referring both to the array of products and the number of people trying to view them.

Just behind the Lehmanns is Guy Kawasaki, president of ACIUS Inc. of Cupertino, Calif. He is surrounded by a crowd that has just seen his demonstration of ACIUS' 4th Dimension programmable database. As usual, he is being peppered with questions.

Speed? "The real test," he says, "is to run dBASE III on a 386 and us on a Mac II."

Is 4th Dimension finally free of bugs? "I've got to be honest," says Kawasaki. "There's no such thing as no bugs."

Ellen Scott is devoting only half an ear to Kawasaki's discussion as she fills out a form that might win her a Mac II. She is here to check out 4th Dimension for a program her company, Clinical Systems International, is developing. The program is a clinical workstation for physicians. "We're using Macs because of the graphical orientation," she says. "For physicians to accept it, it has to be the easiest to use with an ability to just click on."

Jack Feingold from Israel is in the United States to develop a home energy system. Like Lehmann, he has been disappointed with the lack of good Mac engineering applications, but that is not his only problem.

"Apple builds a very good product," he says. "But we've had a serious problem with the dealers. We cannot get the help we need. They shy away from simply saying, 'I don't know.'"

Instead, he says, "They suggest we try this and then this. We own a lot of programs by the time we get to the solution we need."

Feingold and Lehmann say they do not expect to be handed answers to all their problems at the forum. Like mortgage banker Jim Barrow, they are simply Macintosh users combining business and pleasure at an Apple show.

"I just want to see what's new and available," says Barrow. "I haven't found anything in the Apple world yet for my specific needs: loan processing, underwriting, funding."

As the afternoon winds down, some vendors are beginning to lean on their counters. But exhibitor Tina Jackson is still going 90 mph. It is nearly 4 p.m., and Jackson, working at the exhibit of Washington-based MCI Mail has been on her feet with only one break since the doors opened at 9 a.m.

"I'm going on four hours [of sleep] right now," she says, but her enthusiasm has not flagged. During her partner's presentation, she jumps in regularly and excitedly to amplify or clarify a point. People constantly interrupt or wander away, but Jackson says the fragmented presentation does not bother her. "Three of us chatting and one giving the presentation seems to work fine."

The lone recipient of this particular effort is impressed. "I'm going to use this product," says the Mitsubishi Electronics representative.

"That's great," says Jackson. "I love customers like you." ■

Mac helps open doors for handicapped

Technology provides opportunities for physically disabled

BY PRESTON GRALLA
Special to MacWEEK

A young commercial artist, paralyzed from the neck down, wearing a headpiece the size of a Walkman headset sits in front of a Macintosh. He puffs lightly on a straw, and a screen opens. With gentle, practiced head motions he creates a drawing of a powerful-looking eagle virtually indistinguishable from sketches he did before a car accident disabled him.

Several hundred miles away, a mechanical engineer, legally blind but with some vision remaining, exits a Macintosh drafting and design program and calls up an Excel spreadsheet. The characters that appear on the screen are greatly enlarged so he can see the results of his work.

On the other side of the country, a quadriplegic man confined to a wheelchair uses a Macintosh to turn off his television, flick on the lights and turn on his stereo — all through simple head movements and exhalations of breath.

Most employers are unaware of how easily the disabled can use computers. Hence, one of the greatest blocks to employment is not the technology itself but rather ignorance of its capabilities.

Alan Brightman, director of Apple Computer Inc.'s Office of Special Education, says that when sitting in front of computers, there are often no differences between the capabilities of disabled and non-disabled people. But for the disabled, he says, computers can be a doorway into a world otherwise denied them.

Across the United States, Macintosh computers have given thousands of handicapped people access to job tools, employment possibilities and chances for personal growth and expression never before possible. In most cases no extraordinary accommodations to the Macintosh are required. Relatively inexpensive, off-the-shelf hardware and software can simply be plugged into existing machines.

In fact, Apple is taking the handicapped market very seriously. Long aware of how its computers can aid the disabled, Apple established an Office of Special Education to aid the handicapped. The company has even begun to build help for the disabled directly into its operating system by bundling its Easy Access utility with every Macintosh.

The devices and software that allow the disabled to use Macs are as different as individuals' disabilities. But they fall into several general categories and include alternative-input devices for people who cannot use the keyboard; accommodations that greatly enlarge sections of the screen for the visually impaired who have some vision; equipment that synthesizes speech and "reads" the screen out loud for people who are totally blind; and devices that translate screen or printer output into Braille or large-print documents.

The pace of development of these tools for the disabled is accelerating, prodded by new federal laws and purchasing policies for microcomputers, the growing realization in the industry of the importance of providing access for the handicapped and the normal advancement of technology. Already, federal regulations require that U.S. government agencies provide "reasonable accommodation" to handicapped employees, including modifying computer equipment to allow them to do their jobs.

Gregg Richards, a commercial artist living in Yuma, Colo., is one person who demonstrates the capabilities of this technology. Richards, who studied commercial art in college, was in an automobile accident that left him a quadriplegic.

In November 1986 he bought a Mac and a Headmaster system from Personics Corp. of Concord, Mass. The Headmaster consists of a headset that sends signals to a control unit on top of the computer's monitor and software that pops up a miniature keyboard on the screen. Head movements substitute for movements of a mouse, while puffs into a tube hooked into the headset recreate the mouse clicker.

Thanks to the Mac, says Richards, he has been able to set up a design business. His jobs have included designing logos for retail stores and a book cover for a publishing company. He also draws with the computer, keeps all his business records on it and uses it to type business and personal correspondence. Eventually, he plans to expand into desktop publishing.

Andrew Clement, an attorney in Eugene, Ore., also uses the Headmaster system — but not for business. Clement has muscular dystrophy and cannot use his arms or legs; he uses his Mac primarily for playing computer games with his son.

"For me, it's a way to play with him on a semi-physical level that otherwise I'd never be able to do," Clement said.

The Mac can be used by the visually impaired as well as by people who cannot use their hands. Jim Nuttall, a statistician with the Michigan Department of Education, uses a program called inLARGE from Berkeley System Design of Berkeley, Calif. Although legally blind, Nuttall, has some vision. InLARGE magnifies screen fonts so he can read them.

He particularly likes the ability of the LaserWriter or ImageWriter printers to produce large print and says he often uses them to print letters that he sends to low-vision friends.

The National Technology Center of the American Foundation for the Blind uses the Mac in a similar manner. Elliot Schreier, director of the center, says that although IBM PCs are often used at the office, when something needs to be printed it is sent from the PC to the Mac, designed on the Mac and printed out in large type on a LaserWriter.

Macs are well-suited for educating the disabled, says Dolores Hagen, publisher of Closing the Gap newsletter, which focuses on the handicapped, computers and education.

"Productivity software is more accessible on the Mac than any other computer," she says. "It allows you to use the machine with very little orientation. Macs make the difference between functioning and non-functioning for many people … A non-verbal person who was never able to speak can have a computer and it gives him a voice."

Gregg Richards, a commercial artist in Yuma, Colo., demonstrates the Headmaster system from the Personics Corp. of Concord, Mass. The Headmaster headset sends signals to a control unit on top of the Mac's monitor and software pops up a miniature keyboard on the screen. Head movements substitute for movements of a mouse, while puffs into a tube hooked into the headset recreate the mouse clicker. With the aid of this device, Richards is able to run his own graphic design business.

J.D. BENEDICT

Her husband, Budd Hagen, says there is a "finger-spelling" font available for the Mac for people whose disability requires them to communicate in this manner. The entire American sign-language dictionary also is available. A user can type in a word and the sign for it will appear on the screen.

Hagen says the Mac can be adapted easily and inexpensively for use by the disabled. The purchase of the relatively inexpensive inLARGE, the Headmaster system or other products makes the computer accessible to anyone. Several years ago, similar capabilities would have cost tens of thousands of dollars and possibly required a special computer that might not work with other computers in an office.

Voice synthesis for the totally blind is one area where the Macintosh is running behind the IBM PC. While there are a variety of popular voice programs for the PC, Mac versions are more rare and seem to be harder to sell. One program, TexTalk from Assembly Corner in Maynard, Mass., has sold only about a dozen units to date. Nonetheless, Berkeley System Design is developing its own voice-synthesis program for the Mac.

In all likelihood, the federal government will become the main driving force for providing the handicapped with greater access to computers. The General Services Administration administers a Clearinghouse on Computer Accommodation to help federal agencies and employees deal with problems related to handicapped employees. In addition, a joint task force has been established by government officials and the high-tech industry to look at ways of improving disabled people's access to computers in the private sector.

Furthermore, as of October 1988, federal regulations will require that all microcomputers bought by the federal government be easily modifiable for use by the handicapped. Because the federal government is a large buyer of PCs and Macs, hardware and software manufacturers will have to consider accessibility requirements when designing computers and programs to gain lucrative federal contracts. The general market will surely benefit as well.

Gregg Vanderheiden, director of the University of Wisconsin-Madison's Trace Research and Development Center on Communication, Control and Computer Access for Handicapped Individuals, says this will eventually prod the high-tech industry into creating more accessible products.

He says that because more information is kept on computers than ever before and many jobs now require using the machines, it is vital that the disabled gain access to them.

"How important is it?" he asks rhetorically. "How important are doorways? If you don't have access to doorways, you can't get into any of the rooms. In the same way, if you can't operate a computer, you can't get information, you can't get jobs … you're dead in the water."

Apple's Office of Special Education can be contacted through Apple, 20525 Mariani Ave., Cupertino, Calif. 95014; (408) 996-1010. ■

Proposed Toshiba ban threatens production of ImageWriter II

BY RUSTY WESTON
MacWEEK Staff

WASHINGTON — The proposed two-year ban on Toshiba Corp.'s imports would "devastate" Apple Computer Inc., which relies on a Toshiba subsidiary for production of its ImageWriter II printer, Apple officials say.

The Toshiba subsidiary, Tokyo Electric Co., would not be allowed to ship components to the United States for Apple's popular low-end dot-matrix printer if the House approves the present version of the Senate's omnibus trade bill after the August recess. Printer industry analysts say Apple could lose more than $150 million a year if it is unable to produce the ImageWriter II for the U.S. market.

Apple finds itself in the position of having to oppose a ban on Toshiba imports while not appearing to condone violations of important governmental trade and defense agreements. Apple lobbyist James A. R. Johnson, director of government affairs, told the House Ways and Means subcommittee on trade that Apple relies on Toshiba for products that "relate critically to the future of our business."

Industry analysts say Toshiba produces important components for Apple's unannounced 24-pin, letter-quality dot-matrix printer, the ImageWriter LQ. Apple officials say it would take two years to bring another manufacturing company up to speed on basic company specifications.

"It's really hard to get another printer that runs with the Macintosh," said analyst Charles LeCompte of Datek, a market research firm in Boston.

But if new shipments of the ImageWriter II were banned, Brother International Corp. of Piscataway, N.J., or Panasonic Industrial Co. of Secaucus, N.J., might step in with their Mac-compatible printers to grab a share of Apple's 400,000-unit-per-year sales, he said.

"We know Congress does not want to hurt American companies," said Marianne Lettieri, an Apple spokeswoman. "We know Congress will do their best to send a message without hurting American manufacturers."

The Toshiba controversy began in May, when it was revealed that Toshiba Machine Co., a subsidiary of Toshiba, shipped four milling machines for the production of quieter nuclear submarines to a Soviet submarine yard. Silent propellers help make Soviet submarines more difficult to track.

The revelation has heightened pressure on Congress to adopt protectionist measures against Japan, the country most often blamed for the United States' record-high trade imbalance.

Johnson told House members July 14 the governments of Japan and Norway, whose Kongsberg company also compromised the technology, should reimburse the U.S. government for the "full costs needed to once again overtake the Soviets technologically."

A spokesman for the trade subcommittee, Chairman Sam Gibbons, D-Fla., said the Apple presentation went over well. However, strong sentiment abounds on Capitol Hill for punitive sanctions.

"There's a need to give Toshiba punishment that's severe enough to deter other companies that are thinking about doing that in the future," said Secretary of Commerce Malcolm Baldrige.

Hajime Tamura, Japan's minister of international trade and industry, promised Baldrige that Japan plans to stiffen penalties against violators of export-control laws. Tamura said he wants prison terms increased to five years from the current three years.

Japan would also raise its contribution to the Coordinating Committee for Multilateral Export Controls from about $200,000 to $750,000 annually, Tamura said. ■

MARK FARBIN

Apple could lose more than $150 million annually if it cannot produce the ImageWriter II for its U.S. market.

Investment firm predicts increased Mac penetration in Fortune 1,000 companies

BY STUART SILVERSTONE
Special to MacWEEK

SAN FRANCISCO — Bullish Apple investors will find encouragement in a recent quarterly survey conducted by the investment firm Kidder, Peabody indicating that Macintosh penetration in Fortune 1,000 companies will continue and likely increase.

"Apple's stock price might well reach $50 [per share] before the end of the year," said survey director William Easterbrook, Kidder, Peabody partner, vice president and computer stock analyst. The stock now trades in the low to mid-$40s per share, up from the low $30s per share six months ago.

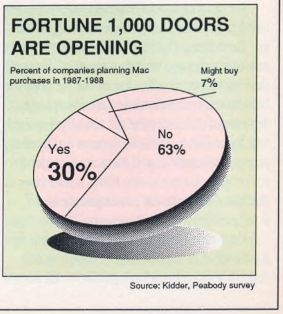
The survey of 61 Fortune 1,000 companies, selected randomly from among a variety of industries, found that of 125,000 personal computers installed, 86 percent were IBM or compatible machines and 9 percent were Apple machines. In the corporate community, "Apple" means primarily Macintosh models. Thirty percent of the companies had a significant base of Apple users.

Conducted after the announcement of the new IBM PS/2 and updated three weeks ago, the survey also indicated that 30 percent of the companies interviewed intend to buy a significant number of Apples in 1987-88. Another 7 percent said they are considering Apple purchases.

"The results were more favorable toward Apple than I would have expected," said Easterbrook. "There were a lot of doubters, including us, about whether Apple could penetrate the corporate market. They exceeded our market share expectations. Also, I thought that Apple penetration would decline [after the new IBM introductions] and the stock price would go down. With sales performance well above original estimates for the quarter ending in June and earnings predicted to be up 50 percent, the outlook for Apple looks good for the next two quarters and for 1988."

Recently, Apple reported the highest third-quarter profits in the company's history.

Industry sources said, however, that Apple is not in for an easy ride in the corporate market. Some business accounts are reportedly less than happy with Apple's lack of a direct sales force to serve and support them. ■



Source: Kidder, Peabody survey

AST Research laser printer may signal rift between Apple and Adobe

BY CLAIR WHITMER
and ELINOR CRAIG
MacWEEK Staff

CUPERTINO, Calif. — The recent announcement by AST Research Inc. of the first competitive laser printer that will support PostScript has some industry analysts speculating about the status of the Apple/Adobe relationship.

Priced at $3,995, the AST TurboLaser/PS will substantially undercut Apple's LaserWriter, which retails for $5,799. The TurboLaser/PS should begin shipping in September.

The announcement by the Irvine, Calif., company is one in a series of events that indicate all may not be well in the royal match of desktop publishing.

Following an announcement in early March that IBM would license the PostScript page-description language for its Personal Pageprinter laser printer, Albert Eisenstat, Apple's senior vice president, resigned from Adobe's board of directors.

"Albert was in a very awkward position since our contract was signed with IBM," said Charles Geschke, Adobe Systems Inc.'s executive vice president. "I would love to have Al on our board; he's a great manager. But obviously, now that we're going into the other side of the personal computer world, he can't be so close to the competition."

Apple still holds about 17 percent of Adobe's stock, according to Adobe's March proxy statement for the annual meeting of shareholders. Apple accounted for 84 percent of Adobe's total 1986 revenue, according to Adobe's annual statement.

Apple is developing an advanced version of its QuickDraw internal graphics routine that will allow a non-PostScript laser printer, according to sources close to Apple.

Despite speculation about growing autonomy between Apple and Adobe, some analysts say the moves are simply a natural business progression.

"The relationship is fine," said Bruce Lupatkin, an analyst from Hambrecht and Quist of San Francisco. "It's been better, of course. It was better when Apple was Adobe's only customer, but all these things have been blown out of proportion."

Charles Geschke said he agrees with this opinion, describing a scenario of himself and top Apple executives going to out to dinner and talking shop, with everything going just fine.

Apple did not return phone calls by press time.

The possible introduction of a non-PostScript printer by Apple does not necessarily mean the Cupertino, Calif., company is dropping Adobe of Palo Alto, Calif., and its very successful line of PostScript-based products. "It's not in the best interest of Apple to switch gears now when they've got all these PostScript printers out there," Lupatkin said.

Even if Apple were to abandon the PostScript standard, which Lupatkin said is highly unlikely, it would not destroy Adobe's financial standing.

"Apple could go away next year and it wouldn't make a huge difference in Adobe's profits. They would feel it, but they still have everybody else," said Lupatkin. ■

Desperately seeking a color monitor

The trials and tribulations of an owner of a new Mac II

BY BILL STEINBERG
Special to MacWEEK

NEW YORK — Back to the window again, looking for the brown truck. My UPS man has taken to waving at me; he knows I'm waiting for a big package from Apple.

No luck today, though. The sun sets, the seasons change, and still no Mac II. It's been on order for more than three months. Why is Apple doing this to me? I want my Mac II NOW!

It's here! It's here! The UPS man and I are both grinning like the Cheshire cat, and I'm signing papers as fast as he can thrust them in front of me. I shake his hand (again), thank him profusely (again), and shove him out the door. Three months of anticipation (insanity) evaporate in 15 seconds.

I drag the boxes over to my computer table The power strip is sitting there, already plugged in, along with a pair of external speakers, a 2,400-baud modem and a brand-new mouse pad. Everything is ready. Unpacking takes no time at all. Installing the video card and extended video memory (256 colors!) goes without a hitch. Now where's that magnificent color monitor I ordered? It must be here somewhere. Hmm, guess what? It's not. Somewhere someone starts laughing; it's not me.

The trouble wasn't with the "mail," so I called developer relations and discovered Apple wasn't shipping color monitors to anyone. "Nothing personal," they told me, "the color monitors just haven't been made yet. Call us back when you want to order the monochrome monitor." Click.

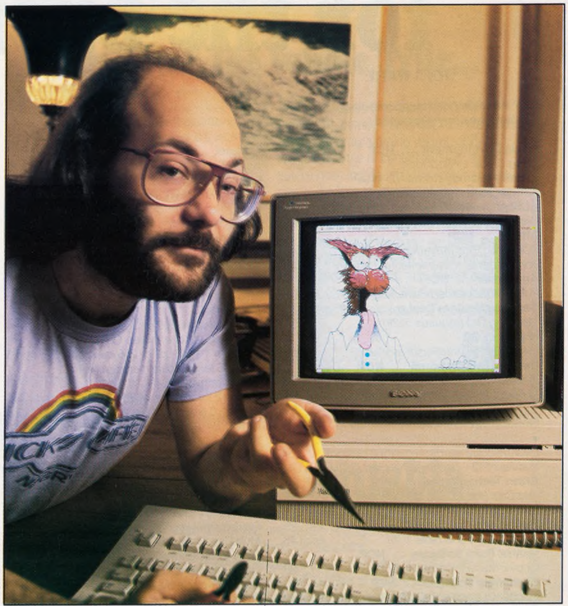
Worse, they had no idea when the Apple color monitors might be available. I called everyone I could think of at Apple, people who *always* knew the answer. None of them knew this time; some even laughed when I asked! It turned out color monitors were in such short supply that *they* can't get one either. I began to get the picture. While there was no insidious plot keeping my Apple color monitor from me, there was also no way I could beg, buy or steal one, no matter how much I whined.

Know what you can do with a Mac II and no monitor? You can turn it on and hear the nicest startup sound you've ever heard. In stereo, no less. The Mac II also has a nice green pilot light on the front. You can look at the green pilot light and listen to the "boing." That's it.

Fortunately, my good friend Frank Brooks was about to go on vacation, and he was willing to lend me his monochrome monitor while he was away. Frank's act of kindness gave me time to investigate the alternatives and to make a rational decision, without being unduly influenced by having a Mac II sitting there that was totally useless (except for it's nice "boing").

Choice No. 1 is to buy the Apple monochrome monitor, which is available now. Then, when the Apple color monitor comes out, you'll have an extra monochrome monitor, which you can sell for a fraction of what you paid for it. (Think of all the other people who are buying Apple monochrome monitors now while they're waiting for the Apple color monitor. They'll all have an extra monochrome monitor at the same time you will.).

You could buy a second video card when the Apple color monitor is available and use both monitors. Since the Apple monochrome monitor costs almost as much as the 13-inch color monitor I'll describe shortly, I don't recommend getting the Apple monochrome monitor unless you really want a two-monitor rig.


RICHARD LEE

Bill Steinberg, who has won nine Emmies for video engineering, is a systems operator for the Mac Users Forum on CompuServe. He is also an Apple-certified developer.

Choice No. 2 is one of the third-party large-screen monitors. SuperMac Technologies Inc. and Personal Computers Peripherals Corp. both have 19-inch color models, and they're both quite good. Both companies offer their own video cards, and both cards display more pixels than the Apple card does. More pixels, in this case, means you'll see more characters in a window or more windows on the desktop, but characters appear the same size on the larger screens as they do on a regular Mac screen.

You'll also get to see two pages in your page-layout program instead of one. Both monitors are very sharp and have very good color saturation and contrast. Full-color pictures viewed on either monitor are staggeringly real, even more so than on the Apple 13-inch color monitor. Unfortunately, both of these monitors are in the $5,000 price range and are huge. If I had an unlimited budget or an acute need for a large color monitor, I'd be tempted to get one of these. (Note that SuperMac is now supplying a different monitor than it first was. This monitor uses a Sony picture tube, and it's much better than SuperMac's original offering, which I don't recommend at all.)

Which leaves us with choice No. 3: the Sony Multiscan (CDP-1302). This Sony uses the same picture tube as the Apple color monitor, and the two are almost indistinguishable. You can buy a Sony Multiscan at discount prices in New York City for around $600, and if you really decide you want the Apple color monitor, you can sell the Sony for almost as much as you paid for it.

At last, a light on the horizon! I run over to my local friendly discounter, and sure enough, they have a Multiscan available. As I'm plunking down my credit card, I ask about a monitor cable. "Sure, we've got a cable, as long as you want to hook it up to an IBM PC." Uh-oh. I buy the monitor anyway, figuring I'll stop off at the Apple dealer on the way home, and pick up an Apple monitor cable.

I should've known better. Even if any of the half dozen Apple dealers here in New York City did have an extra monitor cable they were willing to sell (they didn't), it turns out the Sony has a different connector from the one on the Apple monitor, so the Apple cable wouldn't work anyway.

Time for a little detective work. I log onto CompuServe's Macintosh Users Forum (my second home), and it turns out that Bob Perez (of Apple) has left a wiring diagram that shows how to make up the necessary cable. I run back downstairs and hit the local Radio Shack. They have every conceivable computer connector *except* the 15-pin male D connector that goes on the Mac end. Living in midtown Manhattan does have its advantages, though, and I finally manage to find the necessary connectors and cables at a little electronics store around the corner. Two hours of pin connecting and soldering create a beautiful compromise.

Through the smoke, rises my Mac II, alive and in color. ■

Tips for using Sony, NEC monitors with Macintosh II

PIN CONFIGURATION TO CONNECT MAC II TO MONITORS

Mac II	Sony Multiscan	NEC MultiSync	
1	1	6	Ground
2	3	1	Red
5	4	2	Green/Sync
9	5	3	Blue

Here are some useful thoughts if you decide to take the same path I did: Make sure you set the analog-digital switch on the Sony monitor to "analog." You may be able to rent a Sony Multiscan if you have already committed to the Apple color monitor or you're sure you will really want to buy the Apple when it comes out.

If you can't find a Sony to rent, you can usually rent an NEC MultiSync. I don't recommend the NEC MultiSync because it isn't nearly as sharp as the Sony.

You don't have to build your own monitor cable like I did. Cables are now available for both the Sony Multiscan and the NEC MultiSync from Desktop Software. You can reach the company at (404) 446-2295.

For those of you who like to make cables, here is the pin-out information you'll need.

The connector on the Mac II end is a 15-pin male D connector, and the Sony (or NEC) end takes a nine-pin male D connector. If you use three mini-coax cables the way I did, you'll want to tie all three shields together on each end, solder a small wire to the shields and solder the small wire to the ground pin on both connectors.

If you use cable that has a single shield, connect the shield to the ground pin of both connectors, using the same solder-a-small-wire-to-the-shield-first trick, if necessary.

If your cable is the kind with a foil shield rather than a braided-wire shield, you should find an uninsulated drain wire in the bundle of wires along with the normal insulated wires you use for the red, green and blue signals. Use this uninsulated drain wire for the ground connections.

Set the Sony to "analog" and the NEC to "analog" and "manual." Whether you make your own cable or buy one, make sure it uses shielded cable. If it doesn't, you'll get lots of interference in your picture, especially when you access your disk drive. (Desktop Software uses shielded cable.) — *By Bill Steinberg*

Hardware and software for the business Mac.

SOFTWARE

NCP denotes not copy-protected.
CP denotes copy-protected.

Aegis Development ... NCP	
Doug Clapp's Word Tools	$42.
Affinity Microsystems ... NCP	
Tempo *(power user's macro utility)*	55.
ALSoft ... NCP	
DiskExpress *(maximize disk performance)*	27.
Altsys ... NCP	
FONTastic Plus *(advanced font editor)*	49.
Fontographer *(Laserwriter font editor)*	245.
Ann Arbor ... NCP	
FullPaint *(advanced Paint program)*	53.
Berkeley System Design ... NCP	
Stepping Out *(requires 512k)*	59.
Blyth ... CP	
Omnis 3 Plus *(multi-user available)*	call
Borland International ... NCP	
Sidekick 2.0	59.
Reflex *(information management analysis)*	59.
Turbo Pascal *(HFS compatible)*	59.
BrainPower ... NCP	
Graphidex *(DA graphics organizer)*	69.
Designscope *(electronic circuit design)*	129.
StatView 512+ *(req. external drive, 512k)*	179.
Bravo Technologies ... NCP	
MacCalc *(easy to use spreadsheet)*	85.
CasadyWare ... NCP	
Fluent Fonts *(two-disk set)*	29.
Fluent Laser Fonts *(Vols. 1-15)*	each 48.
Central Point Software ... NCP	
Copy II Mac *(includes MacTools)*	20.
Challenger Software ... NCP	
Mac3D *(3D graphics, CAD features)*	119.
Chang Labs ... CP	
Rags to Riches Ledger or Payables	125.
Rags to Riches Receivables *(req. 512k)*	125.
Inventory Control	243.
Professional Billing	243.
Cortland ... CP	
TopDesk *(7 new desk accessories)*	34.
Cricket Software ... NCP	
Statworks *(statistical package)*	77.
Cricket Graph *(multiple windows)*	127.
Cricket Draw *(advanced draw capabilities)*	177.
Data Tailor ... NCP	
Trapeze *(spreadsheet, reqs. 512k)*	173.
DataViz ... NCP	
MacLink Plus *(transfer Mac/IBM data)*	159.
Digital, etc. ... NCP	
Turbo Maccountant *(GL,AP,AR,Payroll)*	262.
Dow Jones ... CP	
Market Manager Plus 1.5	159.
Dubl-Click Software ... NCP	
Calculator Construction Set	39.
World-Class Fonts! *(both Volumes)*	49.
WetPaint Clip Art *(both Volumes)*	49.
Enabling Technologies ... NCP	
Easy3D *(create solid 3D objects)*	89.
Pro 3D *(3D shaded modeling)*	199.
Forethought ... NCP	
FileMaker Plus *(feature-packed database)*	159.
PowerPoint *(professional presentations)*	249.
FWB Software ... NCP	
Hard Disk Backup *(protect hard disk info)*	38.
Hard Disk Partition *(speeds up hard disk)*	38.
Hard Disk Util *(program backup)*	56.
Ideaform ... NCP	
MacLabeler *(print disk labels)*	29.
DiskQuick *(catalog floppies & hard drives)*	29.
Imagine ... NCP	
Smart Alarms *(DA reminder system)*	38.
Industrial Computations ... NCP	
Powermath *(equation solving tool)*	59.
Infosphere ... CP	
LaserServe *(network software)*	65.
MacServe *(network software)*	175.
Innovative Data Design ... NCP	
MacDraft *(new updated version, 512k)*	159.
LaserWare ... CP	
LaserWorks *(requires 512k, Laserwriter)*	$229.
LaserPaint *(requires Mac Plus, Laserwriter)*	375.
Legisoft/Nolo Press ... NCP	
WillWriter 2.0 *(prepare your own will)*	31.
Letraset ... NCP	
Ready,Set,Go!3	249.
Linguist's Software ... NCP	
Tech *(1000 different symbols)*	59.
Foreign language fonts	call
Living Videotext ... NCP	
More *(outlines, windows, & tree charts)*	158.
Lundeen & Associates ... NCP	
WorksPlus Spell	39.
Micro Analyst ... NCP	
Mac Zap *(recover crashed hard disks)*	36.
Microsoft	
Basic Interpreter 3.0 *(NCP)*	64.
Chart 1.02 *(42 chart styles, CP)*	72.
Multiplan 1.1 *(63 col. by 255 rows, CP)*	105.
File 1.05 *(flexible data manager, NCP)*	111.
Basic Compiler 1.0 *(NCP)*	119.
Fortran 2.2 *(compiler, NCP)*	169.
Works 1.0 *(integrated tool, NCP)*	189.
Excel 1.04 *(power spreadsheet, NCP)*	224.
Word 3.0 *(word processor, NCP)*	239.
Mindscape ... CP	
GraphicWorks 1.1 *(newsletters, posters)*	48.
Monogram ... NCP	
Dollars & Sense *(home, small business)*	81.
Odesta ... NCP	
Double Helix *(relational, custom menus)*	275.
Multi-User Helix *(requires 512k)*	439.
OWL International ... NCP	
Guide *(hypertext, free-form info)*	79.
Guide Envelope System	109.
Palantir ... NCP	
inTalk *(communication to emulation)*	99.
PBI Software ... NCP	
HFS Locater *(DA organizer for HFS)*	26.
HD Backup *(supports MFS, HFS)*	29.
Personal Computer Peripherals ... NCP	
HFS Backup	34.
ProVUE Development ... NCP	
OverVUE 2.0 *(power-packed database)*	149.
Satori ... NCP	
BulkMailer *(mailing lists)*	74.
BulkMailer Plus *(up to 90,000 names)*	225.
Legal Billing *(attorneys to accountants)*	385.
Legal Billing II *(full trust accounting)*	575.
Project Billing *(architects to engineers)*	445.
Silicon Beach Software ... NCP	
Silicon Press *(printer utility, 512k)*	41.
SuperPaint *(advanced graphics program)*	54.
Software Discoveries ... NCP	
Record Holder Plus *(data manager)*	41.
Software Ventures ... NCP	
Microphone 1.1 *(includes Glue™)*	119.
Solutions, Inc. ... NCP	
SmartScrap & The Clipper	41.
Glue *(creates "print to disk" capability)*	41.
State of the Art ... CP	
Electric Checkbook *(print checks)*	28.
SuperMac Technology ... NCP	
SuperSpool	39.
Diskfit *(backup & restore utility)*	49.
SuperLaserSpool	99.
Multi-User SuperLaserSpool	259.
Survivor Software ... NCP	
MacMoney *(financial planner)*	42.
Symmetry ... NCP	
Acta 1.2 *(outline/writing desk accessory)*	38.
PictureBase *(clip art manager, 512k)*	44.
T/Maker ... NCP	
ClickArt Personal Graphics, Effects, Publications, Letters Vol. 1 or 2, Holidays, Business Image	each 28.
Bombay, Plymouth, or Seville Laser font	46.
Write Now *(word processor)*	104.
Think Technologies ... NCP	
Laserspeed *(Laserwriter utility)*	67.
Lightspeed Pascal *(includes debugger)*	87.
Lightspeed C *(top-rated C Compiler)*	$127.
InBox Starter Kit *(CP)*	235.
InBox Personal Connection *(Mac & PC)*	call
TML Systems ... NCP	
TML Source Code Library	58.
TML Pascal *(compiler, req. 512k)*	68.
TrueBasic ... NCP	
True BASIC *(fast, flexible & portable)*	59.
Algebra 1 or II, Pre-calculus, Trigonometry, 3D Graphics, Discrete Math, Probability, Chippendale utilities & Calculus	each 35.
TrueSTAT *(statistics)*	58.
Runtime *(create stand-alone applications)*	59.
William & Macias ... NCP	
myDiskLabeler *(design & print labels)*	24.
myDiskLabeler w/Color *(req. Imagewriter II)*	33.
myDiskLabeler w/Laserwriter option	35.
Working Software ... CP	
(Formerly Greene, Johnson)	
Spellswell *(spelling checker)*	45.

HARDWARE

Manufacturer's minimum limited warranty period is listed after each company name. Some products in their line may have longer warranty periods.

Note: Some hardware items are available in either platinum or beige color. Please specify.

20 Megabyte SCSI Hard Drive	569.
AST Research ... 2 years	
AST Turboscan *(300 dpi scanner)*	1479.
AST 2000 *(20 MB, 20 MB tape)*	1479.
AST 4000 *(74 MB, 60 MB tape)*	3895.
Curtis Manufacturing ... lifetime	
Diamond *(6 outlets)*	29.
Emerald *(6 outlets; 6 ft cord)*	36.
Sapphire *(3 outlets; EMI/RFI filtered)*	47.
Ruby *(6 outlets; EMI/RFI filtered; 6 ft cord)*	55.
Dove Computer ... 90 days	
MacSnap Memory Upgrades	call
Ergotron ... 1 year	
Mouse Cleaner 360°	15.
MacTilt or MacTilt SE	74.
MacBuffer 512k	329.
MacBuffer 1024k	429.
Farallon Computing ... 1 year	
PhoneNET PLUS *(DB-9 or DIN-8)*	39.
Hayes ... 2 years	
Smartcom II *(communications software)*	88.
Smartmodem 1200	299.
Smartmodem 2400	449.
InterBridge *(connect Appletalk networks)*	599.
IOMEGA ... 90 days	
Bernoulli Box *(dual 20 MB w/SCSI)*	1879.
Bernoulli Box *(dual 10 MB, Appletalk)*	call
Kensington ... 1 year	
Appletalk Cable Clips or Connectors	each 1.
Mouse Cleaning Kit w/Mouse Pocket	17.
Disk Drive Cleaning Kit	20.
Tilt/Swivel	22.
Universal Copy Stand	24.
Polarizing Filter or Surge Suppressor	34.
System Saver Mac or Control Center	64.
A-B Box *(for the Mac Plus)*	64.
Turbo Mouse	85.
Koala Technologies ... 90 days	
MacVision *(digitizer)*	175.
Migent ... 1 year	
Pocket Modem *(ext. 1200 baud)*	169.
Mirror Technologies ... 1 year	
Magnum 800 External Drive	209.
Magnum 20 Tape Backup	899.
MagNet 40/40 *(40MB, 40MB tape)*	2395.
MagNet 20x *(w/cable)*	779.
MagNet 30x *(w/cable)*	949.
MagNet 40x *(w/cable)*	1299.
MagNet 85x *(w/40MB tape)*	3995.
Network Specialties ... 1 year	
Stretch Screen *(19" monitor)*	1579.
Personal Computer Peripherals ... 1 year	
MacBottom Hard Drive 21MB *(SCSI)*	$865.
MacBottom Hard Drive 45MB *(SCSI)*	1295.
Summagraphics ... 90 days	
MacTablet 12" x 12" *(sketching)*	379.
Systems Control ... 2 years	
MacGard *(surge protection)*	55.
Thunderware ... 90 days	
ThunderScan 4.0 w/Power Port	199.
Western Automation ... 1 year	
DASCH RAMdisk 2000k	459.

DISKS

Double-sided Diskettes

Sony 3½" Disks *(box of 10)*	21.
MAXELL 3½" Disks *(box of 10)*	21.
Fuji 3½" Disks *(box of 10)*	21.
Verbatim 3½" Disks *(box of 10)*	23.
3M 3½" Disks *(box of 10)*	23.

INFORMATION SERVICES

Compuserve	
Compuserve Information Service	24.
Dow Jones	
Dow Jones News/Retrieval Membership Kit	24.

ACCESSORIES

I/O Design	
Imageware II *(Imagewriter II carry case)*	49.
Macinware Plus *(Mac Plus carry case)*	69.
Macinware SE *(Mac SE carry case)*	89.
Kalmar Designs	
Teakwood Roll-top Case *(holds 45 disks)*	14.
Teakwood Roll-top Case *(holds 90 disks)*	21.
Moustrak	
Moustrak Pad *(standard 7" x 9")*	8.
Moustrak Pad *(large 9" x 11")*	9.
Sensible Softworks	
High Quality "MacAttire" dust covers	7-17.

OUR POLICY

- We accept VISA and MASTERCARD.
- No surcharge added for credit card orders.
- Your card is not charged until we ship.
- If we must ship a partial order, we never charge freight on the shipment(s) that complete the order.
- No sales tax.
- All U.S. shipments insured; no additional charge.
- APO/FPO orders usually shipped 1st Class Mail.
- Allow 1 week for personal and company checks to clear.
- UPS Next-Day-Air available.
- COD max. $1000. Cash or certified check.
- 120 day limited warranty on all products.*
- To order, call us anytime Monday thru Friday 9:00 to 9:00, or Saturday 9:00 to 5:30. You can call our business offices at 603/446-7711 Monday through Friday 9:00 to 5:30.

SHIPPING

Note: Accounts on net terms pay actual shipping. **Continental US:** For printers and hard drives add 2% for UPS ground shipping (call for UPS Blue or UPS Next-Day-Air). For all other items, add $2 per order to cover UPS shipping. We will automatically use UPS 2nd-Day-Air at no extra charge if you are more than 2 days from us by UPS ground. **Hawaii:** For printers and hard drives, actual UPS Blue charge will be added. For all other items, add $2 per order. **Alaska and Outside Continental US:** Call 603/446-7711 for information.

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Max Out

Corporate image.

Way back when, in the peaceful little village of Marlow, NH (pop. 552), Lucian and Lucius Tinker laid the foundation for our Macintosh mail order megalopoly. Sure, they thought a mouse was something you set traps for, and chips came from buffaloes, but when it came to running a business, Lucian and Lucius knew the secrets. Like taking the time to answer strangers' questions. And dealing fairly with every customer. And always delivering on time.

At MacConnection, we do business the same way. We are the leading mail order supplier of Macintosh add-ons and software. Our sales people know what works, how it works, and how to make it work better. We offer competitive prices combined with complete product support. But, most of all, we have a reputation for giving the kind of personal service that many people thought went out of style with starched collars. So, next time you need to perk your Mac up a little, give us a call.

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Calculus (REG. $35) .... *with purchase of True BASIC* **$25**
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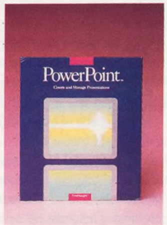

There are lots of great programs for creating graphs, time charts, cash flow projections, written strategies, etc. but turning them into effective presentations can be a bear.

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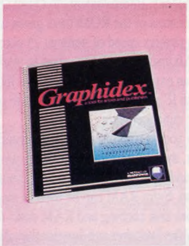
Solutions, Inc.
Glue (not copy-protected) .. **$41**

Build your own image bank.



Wouldn't it be nice to have all your favorite format graphics in one convenient location, instead of pawing through all those disks trying to remember where you left them? Well, get *Graphidex*. You can put up to 10,000 MacPaint or MacDraw pictures into the *Graphidex* index. Then you can retrieve, preview, edit, and paste them whenever and wherever you like, without touching the originals.

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LIFE IN THE FAST LANE

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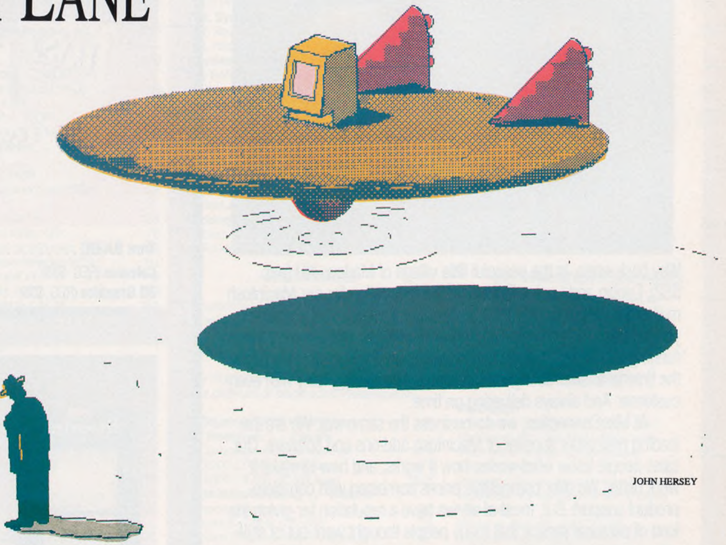


JOHN HERSEY

BY RIC FORD
MacWEEK Staff

Like any personal computer or workstation, the Macintosh is just a tool, a means to an end. Getting to that end is inherently easier on a fast machine than on a slow one.

Every time the computer makes you wait for a task to be completed, you stop thinking about what you're doing and think instead about what you're doing it with. Your productivity suffers as a result.

Most would agree that the widespread acceptance of the Macintosh II is directly attributable to its stunning performance compared with other machines in its class. But you don't have to trade in your Macintosh Plus or SE to get similar performance.

This article takes a look at some of the basic components of the Macintosh and the performance issues surrounding them. Then it describes the latest options to enhance performance of a Macintosh.

The accompanying chart gives a quick picture of the history of Macintosh performance. It shows the amount of time it takes to scroll through a MacWrite document on a variety of different Macintosh computers ranging from the old Macintosh XL (originally called the Lisa) to the latest Macintosh SE with a General Computer 68020 accelerator board. It took only three years to quadruple Macintosh performance, and the price range is unchanged.

The performance chart looks simple, but these results represent a long development path with many obstacles and decisions. Let's look at performance component by component.

Hardware

All Macintoshes use 32-bit Motorola 68000 series processors. Fortune was smiling on Apple when the processor decision was made, and that wise choice is now paying off in soaring sales. The 68000 series is powerful and programmer-friendly, and its clean architecture has made upgrading the Macintosh to new generations of the processor far easier than upgrading the IBM PC and its clones.

Much of the quadruple increase in speed shown on the chart is due to improvements in the processor itself, notably the ability to run at a faster clock rate — almost 16 MHz in the Macintosh II and accelerated Macintosh SE vs. about 4 MHz for the Macintosh XL.

The newer 68020 processor used in the Macintosh II and most accelerator boards has additional built-in support for coprocessors such as the 68881 and 68851, powerful chips dedicated to specialized applications such as arithmetic and memory management. When an application is written to use this kind of processor team, computational tasks can be speeded up 10 or even 100 times.

Now, with the advent of the Macintosh II and its standard 68881 numeric coprocessor, we're beginning to see examples of applications, like Excel 1.04, that are written to take advantage of coprocessors.

The Macintosh is, at heart, a graphics machine. Graphics made it what it is, and graphics performance keeps it ahead of other computers. The key to graphics is the ROM, two chips that contain the QuickDraw program, written by Bill Atkinson, and some other building blocks. Improvements to QuickDraw in later versions of the ROM have given us a boost in graphics speed of perhaps 25 percent overall. Atkinson's work was good to start with and we can expect to see more features like the Macintosh II's color before we see more performance enhancements.

When you're running a VAX superminicomputer, the solution to performance problems is "add more RAM." It's no different on a Macintosh. Extra RAM can be used in many ways, from disk caching and RAM disks to software like Switcher and Juggler that allow a degree of multitasking. RAM is a sort of Berlin Wall for application programs — they are tightly confined by the limits of available RAM. If you want performance and you've exhausted cheap solutions such as using the RAM cache on the Control Panel, the first place to invest your dollars is in additional RAM.

Even if you speed up your Macintosh processor and add lots of RAM, you'll still spend lots of time looking at the watch cursor unless your hard disk is fast enough to keep up. Fortunately, the SCSI port provided with all Macintoshes since the Macintosh Plus is a fast conduit for moving data quickly to and from your hard disk.

The key to SCSI hard-disk performance is the driver software and the controller used by the disk vendor. Disks like SuperMac Technology's DataFrame 40XP provide high performance through software and controller optimization, although the hard drive used is not significantly different from those used in slower units. Data transfer in the Macintosh is bottlenecked at the processor because the Macintosh lacks a big-computer feature known as DMA (direct memory access).

Hard-disk speed is tied to processor speed through the driver software. Faster processors make it easier for disk manufacturers to increase data-transfer rates, but there may be performance problems if a disk is formatted with the faster processor and then moved to a slower Macintosh Plus or Macintosh SE. Disks like the DataFrame 40XP don't have this problem because they already transfer data at full speed on a Macintosh Plus.

Of course, if you really need the ultimate in disk performance, the answer is still RAM. A RAM disk can be created using the Macintosh's internal memory, and its speed will far exceed the performance of any hard disk. An even faster solution would be an external RAM disk connnected to the SCSI port and supported by battery backup. Unfortunately, we know of no such device.

Software

The speed of the System and Finder is crucial to overall system performance and the current versions are significantly faster than before, although Apple doesn't advertise the fact. For those users still running 1984-vintage Finder

Continued on next page

Accelerator boards: Peak of performance

The accelerator board is the ultimate performance enhancement you can add to your Mac.

With the more-open architecture of the Macintosh SE, companies like General Computer of Cambridge, Mass., and Levco Inc. of San Diego can now develop and sell performance products without the user fearing that the SE's warranty will be affected or having to construct fans, power supplies and special connectors. They've taken the bait, and several new accelerator boards are now available. Surprisingly, a group of Macintosh Plus accelerator boards have appeared on the market at the same time, probably because many technical problems have been worked out during the last year or so.

The biggest drawback to accelerator boards has always been their high prices. This problem has been addressed aggressively in 1987. Levco's Prodigy 4 was $7,000 when it was introduced a year ago, but it's now less than $2,000, and the Radius Accelerator has just been introduced at less than $1,000.

The result of significantly lower prices is that Macintosh II performance is now available for regular Macs at an affordable price. The added benefit of many accelerators is a compatibility mode that the Macintosh II lacks, enabling users to run virtually all Macintosh applications whether they've been designed to work with the Mac II or not.

How do these accelerators work and how do they differ?

What all Macintosh accelerator boards have in common is an additional 68000 series processor that is used in place of the Mac's normal 68000 to gain greater speed. The processor on most of these boards has a clock speed of 12 MHz to 16 MHz (one and one-half to two times the normal rate).

This improved clock speed gives a corresponding improvement in performance; most applications will run one and one-half to two times faster. You can get an even greater performance boost if your accelerator board uses a 68020 processor rather than a 68000.

The 68020 has something called an "instruction cache" built into the chip. Like the RAM cache mentioned earlier, the instruction cache stores recently used information in a special high-speed buffer. Most software now being developed will be designed to take advantage of the instruction cache and other features of the 68020. For example, Word 3.0 scrolls much faster when the instruction cache is available.

Another feature of the 68020 is full support for coprocessors. A 68881 arithmetic coprocessor will boost performance when used in a 68000-based board, but it will perform even better with a 68020 partner. The upcoming 68851 coprocessor will provide the Mac with a hardware foundation that can support dramatically different software — software that will handle massive amounts of RAM and will enable many programs to run simultaneously. The 68851 will work only with the 68020.

Accelerator boards typically come with extra RAM on board. Manufacturers do this partly because extra RAM capacity is important to performance, but also because their dedicated RAM can be designed to operate faster than the Macintosh's own RAM. Except for the Mac II, the 68000 processor used in all Macintoshes shares access to RAM between the processor and the video circuitry. The 68000 can get two characters at a time (16 bits) from RAM, but it has to wait if the video RAM is being used to update the screen. A 68020 processor on an accelerator board can grab four characters at a time from its own RAM, and because the RAM is dedicated exclusively to the processor, it doesn't have to wait for the video circuitry. The resulting speedup can be noticeable.

In addition to Apple's RAM cache and Motorola's instruction cache, Radius has implemented a third cache technique called SRAM. SRAM is short for static RAM, a type of RAM that is expensive but very fast. Radius has put a small amount of SRAM on its accelerator board, using it to store often-used data from RAM and ROM. The overall performance improvement with this technique is impressive, and the cost of this small amount of SRAM is less than the megabytes of normal RAM used in other designs.

The standard Macintosh processor can read from ROM faster than it can read from RAM because of the video convention described above. With dedicated accelerator RAM, however, the situation is reversed: The ROM access appears slow. One solution is Radius' SRAM cache, which works as well for ROM as it does for RAM. Other vendors are attacking the problem from a different angle. General Computer is now beta-testing a piece of software called HyperROM Init. It copies most portions of Apple's ROMs into dedicated RAM on its HyperCharger 020 board. Because the ROM is only about 100 Kbytes in size, it doesn't take a big chunk of RAM to hold it, and the performance increase from the faster access is significant.

Compatibility

Overall, Macintosh software is surprisingly compatible with the new processors, thanks mostly to the design integrity of the 68000 family. Some of today's applications, however, will not run correctly on a 68020 processor, particularly music, game and telecommunications programs. For another year or so, it will be useful to be able to run a Macintosh in "compatibility mode," that is, to disable performance features such as high clock rates, 68020 instruction caching and the 68020 itself, dropping back step by step to a standard 8-MHz 68000 configuration.

Full-compatibility mode is an option on accelerators from Radius and Levco, and it's something that you can't get with a Macintosh II (since it has no 68000 to drop back to). When full-compatibility mode is not available, it is still helpful to be able to turn off the 68020 instruction cache. That will enable a number of programs to run that otherwise have problems.

In the next two issues, MacWEEK will review in depth the accelerator boards currently available for the Macintosh SE and Macintosh Plus. — *By Ric Ford*

Continued from previous page

1.1 and System 1.1, switching to System 2.0 or 3.2 would give them a dramatic increase in overall performance.

HFS, the hierarchical filing system provided with all recent Macintoshes, resulted in another quantum leap in performance over older software, making hard disk use far more efficient.

A disk cache is a portion of memory that is set aside to store information that has recently been read from the disk. If the Macintosh needs the information again, it gets it from the disk cache. This improves performance because accessing RAM is much faster than accessing a disk. Disk caching is a built-in feature of the Control Panel.

The future

Performance is a tricky thing that's hard to measure. What's important is how it relates to your job and productivity, not what magazine advertisements say about clock rates and access times.

Many performance improvements come cheap. Using a disk cache and the current software, for example, can make dramatic improvements.

Apple's basic hardware and ROMs are evolving, too. Hard-earned lessons are producing incremental improvements in the design of the computer that make a big difference when they are added together. Upgrading to newer Macintoshes is the second step for achieving good performance.

The third step is to add basic hardware building blocks: RAM and a fast hard disk. These components are not terribly expensive, and they have a large effect on the system as a whole.

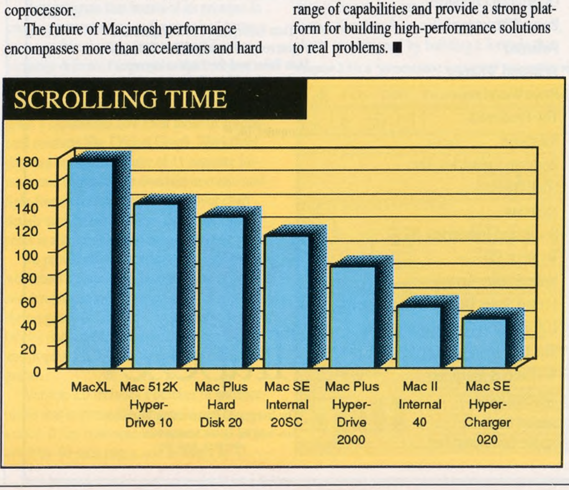
If you need still more speed, there is now a vast menu of processor options from which to choose. Graphics and other tasks will be a lot faster when an accelerator board is used. The time required to do arithmetic calculations can be cut dramatically with a 68881 coprocessor.

The future of Macintosh performance encompasses more than accelerators and hard disks. Macintoshes are rapidly being integrated into networks, and network performance soon will be as important as processor and disk performance.

Advanced software environments will relieve users of the burden of waiting for slow tasks like printing and transferring files across telecommunications lines and will give them the ability to use multiple applications without any delay in switching from one to the other.

Macintosh systems today offer an amazing range of capabilities and provide a strong platform for building high-performance solutions to real problems. ■

SCROLLING TIME



Quick definitions

This is a glossary of some technical Mac terms used in these articles.

Accelerator board — Circuitry containing a faster processor that can be added to the Mac to improve performance.

RAM — The part of a computer's memory used for short-term retention of information (in other words, until the power is turned off). Programs and documents are stored in RAM while you're using them.

RAM cache — An area of memory set aside to hold information recently read in from disk so that if the information is needed again, it can be gotten from memory, which is much faster than getting it from disk. The size of the Mac's RAM cache and whether it's turned on is set on the Control Panel.

ROM — The part of a computer's memory used to store programs that are seldom or never changed. The name is short for "read-only memory" because you can read information from it but can't write information to it the way you can with RAM.

SCSI — An industry-standard interface for hard disks and other devices that allows for very fast transfer of information. It's short for "small computer system interface" and is pronounced "scuzzy".

*Reprinted with permission from "The Macintosh Bible" by Dale Coleman and Arthur Naiman.

VISIBLE RESULTS

Steve Rosenthal

The Clipboard and Scrapbook on the Macintosh always seemed a bit underpowered to me, at least for working with bigger blocks of text or with multipage images.

Although I continue to hope Apple will strengthen these data-interchange facilities in a future system-software upgrade, I've found that often I can get my larger clip-and-paste jobs done quickly and easily with the Glue program from Solutions Inc. of Montpelier, Vt.

Glue, to put it simply, intercepts the information that would have been sent to the printer and captures it to a file on disk. (For Mac hackers, it captures the data at the QuickDraw stage.) You can then view that information, print it or save portions as MacPaint files.

At its simplest level, Glue can be used as a super Scrapbook, capturing any number of pages or documents in print form and putting them onto disk. To capture data, you select a special "ImageSaver" print substitute with the Chooser Desk Accessory, then do a normal print operation from the File menu in any standard application.

Each print operation creates a separate disk file, so you're not limited to the current Clipboard or Scrapbook. You specify what you want saved by individual page or by page range.

Once you've got that down (which should take only a few minutes if you're an experienced Mac user), you can use Glue to turn pages of output into MacPaint documents. That, in turn, lets you read the selected pages into a paint-style program, where you can add flourishes or touch up mistakes.

MacPaint works, but if you have a laser printer I'd suggest SuperPaint so you can use the draw features and the 300-dpi LaserBits features as well. You can also use any other program that accepts paint-style images, such as a desktop-publishing program.

Glue files, of course, are only images and cannot substitute for their originating applications. Spreadsheets no longer calculate and charts no longer reposition with new input values. On the other hand, Glue files are completely independent from those originating programs. Consequently, users who have a Glue Viewer can look at or print out any Glue-captured documents given to them, whether or not they have the original application program used to create the image.

Several vendors of communications programs bundle Glue with their software, and it's a part of the Dow Jones/Apple/MCI program Desktop Express. I've been using the version that came in the new upgrade for Software Venture's MicroPhone, which even has a viewer program in the form of a Desk Accessory.

Naturally, there are a few limitations. Because Glue gets its input by simulating a printer tied in through the Mac system software, only output that uses the standard print driver can be captured.

Fonts can also be a problem. In the capture process, Glue's ImageSaver saves the Macintosh QuickDraw form of each page, which means that text is saved as blocks of a specified position, size, style and type font. If that same lettering isn't available when the file is viewed or printed, you can get some very strange effects.

Using Glue as a super Scrapbook for multipage documents is limited for now as well because few Mac programs accept files from outside sources except through the Clipboard. In most cases, you'll find that you end up either cutting from the Glue Viewer into the Clipboard and pasting into a file or saving a Glue page as a MacPaint document and then importing it in that form.

Furthermore, the Glue Viewer could use more flexibility. Right now, it pages and scrolls through documents in full size only, but on a standard Mac that means you can only see about a third of a normal page at a time.

So, whether from Apple or Solutions, there's still more work to be done. Maybe this same idea could be merged with Microsoft's Rich Text Format (RTF) to widen information sharing between programs and even between operating systems. On the Mac, a standard viewer should be part of the basic desktop.

But those are all wishes, and day to day we work with the tools we can get. In that context, I'm finding Glue is a useful way of filling in one of the Macintosh system's more obvious small gaps. ■

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Minimum System Requirements: enhanced Macintosh 512K with 800K external drive. Supports Macintosh versions 512e, Plus, SE and Mac II (*in color!*).

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It began life as the "spreadsheet without limits," but now, with the release of Version 2.0, Trapeze is being billed as "the integrated presentation worksheet," with the emphasis on "presentation." The change of focus is appropriate. Although Trapeze 2.0 is sure to find a market among those who require its uniquely powerful number-crunching capabilities, it is likely to attract an even wider audience as an innovative vehicle for compiling spreadsheet data, text and charts into attractive, information-packed reports. In either case, the power comes at a price, but for many users it may well be worth paying.

Trapeze 2.0 is above all a high-powered spreadsheet, but its flexible approach to the design of screens and reports makes it a desktop-publishing and presentation tool as well. The key to the program lies in its use of blocks, the fundamental units of the worksheet. Separate block types hold text, graphics, charts, database records and spreadsheet data. Any block can be moved independently to any location on the worksheet, sized as desired and assigned any color scheme, text style or font. To facilitate page layout, rulers have been added to Version 2.0, as have "splitters" that divide the screen into four independently scrollable views.

Each spreadsheet-type block — for numbers, labels or formulas — is a matrix of individual cells, a sort of mini-spreadsheet with its own rows and columns. All the cells in a block can hold only one type of data; labels and numeric data, for example, cannot be mixed in the same block. Formulas can refer to other blocks and other worksheets.

This block-oriented organization makes Trapeze unusually versatile in setting up and altering spreadsheets that contain repeating data structures. For example, a quarterly report showing three months of sales figures can be automatically expanded to an entire year's worth of columns simply by resizing one of the data blocks. The block concept also allows complex matrix mathematics, in which, for instance, all the cells in two blocks are multiplied to produce a block containing a third matrix.

Trapeze's repertoire of spreadsheet functions is enormous, totaling more than 140 routines. These include an assortment of esoteric matrix math functions — anyone for multiple linear regression with correlation? — and a generous complement of more familiar financial, statistical and logical functions. Another sign of Trapeze's mathematical sophistication is an iteration feature that calculates a formula repeatedly — in an order specified by the user — to produce ever closer approximations of the desired result. Disappointingly, however, a macro facility is still missing in Version 2.0.

To make auditing the worksheet easier, Trapeze allows users to annotate each block with short comments. Lengthier descriptions may be entered into special text blocks. In addition, the program automatically detects circular references in formulas and can print a worksheet summary showing block names, sizes and formulas.

Trapeze's text-editing features are suitable for annotating number-based reports, but they are clearly inadequate for much more. Articles cannot be flowed across more than one block. Only plain text files can be imported.

Simple database functions are supported via the standard spreadsheet table convention: A row is a record; a column a field. The data can be sorted via a simple dialog box, but the user must build a formula using Trapeze spreadsheet functions to find records matching a set of criteria.

Any program that boasts of its prowess in creating presentations and reports had better have capable charting features, and Trapeze certainly delivers the goods in this category. The whole graphics function has been substantially enhanced for Version 2.0, and the program's capabilities now rival those of specialized products like Cricket Graph. Worksheet data can be charted in any of 11 separate formats, and charts can be overlaid to create multiple-format composites. Control over chart details such as labels, lines, tick marks and color is almost unbelievably extensive.

To provide block-borders and highlight worksheet information, boxes, squares, lines and arrows can be created from scratch within the program. If Trapeze's own graphics capabilities don't suffice, Trapeze also can import and display PICT-format files from other programs.

Version 2.0 includes a number of enhancements that improve the program's performance. It can now support documents as large as 40-by-40-inch pages, and as many as 32 worksheets can be open simultaneously, if memory permits. Support for the 68881 math coprocessor chip has been improved, and the Undo command — feeble in previous versions — now reverses most actions, but not Cut or Paste.

It's easy to find the advantages and disadvantages inherent in Trapeze's block structure. The freedom to move blocks anywhere is great for customizing reports to present information for greatest impact. On the other hand, it makes creating even the simplest spreadsheet structure a much more time-consuming process.

With an ordinary spreadsheet, the user can start entering data as soon as the program is loaded. To use Trapeze, careful planning and setup are required, although the program makes it easy to change things if initial efforts go awry. Because blocks have no fixed location, the cryptic but familiar numeric cell references typical of ordinary spreadsheet programs would have no meaning in Trapeze, and every block that will be referenced in a formula must be named.

The block structure also can cause headaches for those who wish to report on data from a standard spreadsheet or database. Version 2.0 now imports tab-delimited and WKS files but only into a single block, leaving the user to shuttle the imported data manually into the final destination blocks.

Trapeze is no turn-it-on-and-go program, and careful reading of the documentation is required. For a product with its wealth of features, however, Trapeze is relatively simple to master. The program includes keyboard equivalents for nearly every command.

One major hurdle new Trapeze users face is learning to use the seven separate types of cursors, one for creating each block type and two for altering existing blocks. With a bit of experimentation and manual-reading, though, the cursor library should be manageable. Command-key equivalents make it relatively easy to move from one environment to another. Actually placing and manipulating blocks on the worksheet turns out to be a simple matter.

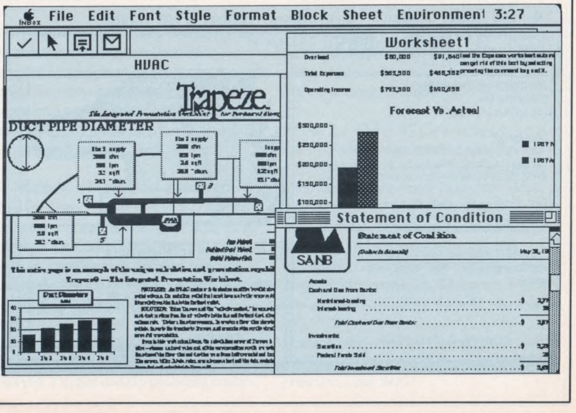
In other spreadsheet programs, users select data to be put in a graph with the mouse, then format the chart from a dialog box. In Trapeze, charts are designed by building a formula that includes one of the special chart functions; various modifications are possible on a dialog box once the chart is on the screen. Anyone who hopes to tap the full power of this program will have to be conversant with formula syntax anyway, but those who want to use Trapeze primarily for its reporting features may find the procedure forbiddingly complex.

CAMILLE GOOD

An extensive and easy-to-access on-line Help file located in the Apple menu should guide users through most rough spots. The manual, which is complete, well-written and easy to navigate, is much superior to the one that accompanied previous versions. More than 100 pages of tutorial material has been added, including special exercises to illustrate representative business and scientific applications. Illustrative sample files are included with the package, some of which could be adapted for actual use.

Trapeze has great strengths both in its very advanced spreadsheet-type features and for some kinds of report generation. How many people need that particular combination remains an open question. Most users could get by with simple arithmetic functions for their reports, and they would certainly benefit from better control of text. On the other hand, technically-minded users may prefer straightforward calculating power to all the pretty embellishments. Still, for users who need a full-power product in either category, and most of all for those who need the combination, Trapeze will be a very valuable tool. — *By Steve Cummings*

Trapeze 2.0 is a "presentation worksheet" integrating sophisticated math functions and charting capabilities.



COURTESY ORANGE MICRO INC.

Ragtime 1.1

Orange Micro Inc.
1400 North Lakeview Ave.
Anaheim, Calif. 92807
(714) 779-2772
$282 (street price); **$395** (list price)
Requires 512K Enhanced or larger Mac.
Strengths: Solid page-layout program without frills but with enough features for many users, plus spreadsheet capability. Not copy-protected.
Weaknesses: Lacks the ability to chart spreadsheet data.

Among the several programs competing in the Mac desktop-publishing market, Ragtime is unique in including a spreadsheet. Although the program's features are somewhat limited, the integrated approach makes sense for those who want an uncomplicated tool for creating good-looking business proposals and reports. Potential buyers should be aware, however, that Ragtime cannot create its own charts from spreadsheet data — a curious omission from a presentation-oriented program.

Like Letraset's Ready,Set,Go! and Quark XPress, Ragtime allows free-form placement of screen blocks (called frames) that hold text, graphics and spreadsheet information. Within text frames, Ragtime makes an effective if rather elementary word processor. For users who prefer to prepare report copy in a full-fledged word processor, Ragtime 1.1 can import formatted text from MacWrite and Word 1.05 — but not from Word 3.0 — and it can output text-only files.

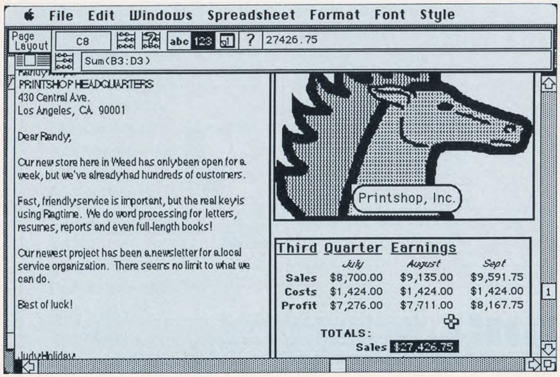
Ragtime does not pretend to be a highly sophisticated typesetting program, but it does offer a variety of useful formatting options, including several types of justification and tabs as well as variable line-spacing and leading. The current version does not support kerning, but the vendor, Orange Micro Inc. of Anaheim, Calif., says that an enhanced version due out in October will include manual kerning. (See sidebar for additional details.) Rulers — similar in function to MacWrite's but much smaller in size — can be inserted anywhere in a text frame and can be freely copied to other locations. A unique and powerful font-and-style-change function makes it easy to replace any font, size, style or combination of characteristics throughout a single text frame, an article or an entire document.

Text can be flowed from frame to frame with a "pipeline pencil." Markers at the end of each linked frame inform the user where the pipeline started and which frame comes next — a valuable feature omitted from Ready,Set,Go! 3's otherwise similar paradigm. One thing missing is a quick facility for copying a full format, including font and style attributes, from one text block to another.

Ragtime's spreadsheet frames are conventional row-and-column tables, but with several differences that allow flexible and elegant reporting. Frames can be sized and moved around the screen to taste. The height and width of individual cells can be changed, and different fonts, point sizes and character styles can be used in different cells.

Fifty-five spreadsheet commands and formula functions cover basic mathematical, statistical and financial calculations. Cell references can be either relative or absolute, and any number of different spreadsheet frames can be linked easily. Excel-type SYLK files can be imported; DIF and WKS files cannot.

With Ragtime's integrated spreadsheet, it is easy to update business data on a layout page.



PRINTSHOP HEADQUARTERS
430 Central Ave.
Los Angeles, CA 90001

Dear Randy,

Our new store here in Weed has only been open for a week, but we've already had hundreds of customers.

Fast, friendly service is important, but the real key is using Ragtime. We do word processing for letters, resumes, reports and even full-length books!

Our newest project has been a newsletter for a local service organization. There seems no limit to what we can do.

Best of luck!

Judy Holiday

Third Quarter Earnings

	July	*August*	*Sept*
Sales	$8,700.00	$9,135.00	$9,591.75
Costs	$1,424.00	$1,424.00	$1,424.00
Profit	$7,276.00	$7,711.00	$8,167.75

TOTALS:
Sales $27,426.75

Orange Micro will preview Ragtime 2 at Mac Expo

Ragtime 2, an enhanced version of the page-layout and spreadsheet program from Orange Micro Inc. will be shown at the Mac Expo in August. According to the vendors, the new version is currently scheduled to ship in "mid-to-late October."

Described as a "document-processing" program, Ragtime 2 will offer new word-processing features like auto-hyphenation, spell-checking, manual kerning and a mail-merge facility.

Graphics handling will also be improved, with new support for PostScript, Encapsulated PostScript and TIFF files as well as the ability to use layouts with overlapping frames.

Charting capabilities, however, will not be added in the October release. Ragtime 2 will support gray scales and color on the Mac II and will automatically use the 68881 math coprocessor for numerical functions.

The price of Ragtime will remain at $395. Owners of the current version will be able to upgrade for $75, while those who buy it after Aug. 11 will be entitled to a free upgrade. ■

Although Ragtime lacks the highly sophisticated mathematical and scientific commands found in Trapeze, it does have some handy extras designed to make everyday business data-handling easier. By building a "lookup table," for example, you can have the program automatically supply price and product name when you enter a part number, or determine the proper sales tax when you type in a ZIP code.

Ragtime's most serious limitation is its inability to generate business graphics. Users who regard charts as essential elements of their reports will have to rely on other software to produce them. MacPaint files and PICT graphics can be imported into Ragtime's picture frames, then resized, cropped or moved around within the frame. The current version of Ragtime makes no provision for PostScript files.

Although it does not measure up to high-end desktop-publishing programs — and Orange Micro says it is not intended to — Ragtime is still a strong layout tool. To dress up a page, users of the program can draw in lines of various widths. Frames can have visible borders, with a user-selectable thickness, corner style and shadow. Frames can be sized and resized, moved and duplicated with abandon, except that their edges cannot overlap. For precise placement, Ragtime provides a readout of x and y coordinates as frames are moved. A grid also is available, but there are no layout rulers.

When an entire document's design must be altered, changes in the size, position or other attributes of the frames on one page can be applied to other pages that have the same layout. Text frames can be divided into equal-sized columns and can be given a range of gray-scaled backgrounds with either black or white characters. Because frames can be nested within frames, graphics can be placed next to text, although there is no easy way to make text flow around irregularly shaped graphic images.

Windows can be split into as many as nine segments for close-up examination of different areas of a document, while a Show Page command provides an overview of the whole layout; it is even possible to edit in this reduced mode. The program takes full advantage of large-screen displays. Color is more complicated: While the current version has no provision for displaying color on-screen, a PICT file created in a program that does support color will retain the information required for color printing on an ImageWriter II.

Ragtime makes special provisions for creating and storing reusable layouts or style sheets, which Orange Micro calls "forms." Each time one of these templates is opened, the program conveniently creates a new file, while the original template remains intact.

Ragtime is sturdily built. It tolerated the creation of complex page layouts in multiple files with equanimity. Large documents can be imported without incident as long as enough text frames are created to receive them.

The program's manual, with well over 300 pages, is readable and thorough, and the index is complete and well-designed. You *will* need to consult the documentation — there is no on-line help — but by and large, Ragtime is a straightforward program, and users familiar with other Mac applications should become productive quickly. With its several integrated functions, Ragtime has many commands and options but keeps things tidy and easy to understand by varying menu and icon bar options according to the type of frame selected. Unfortunately, keyboard alternatives are provided for only the most commonly used functions.

Although Ragtime is short of some high-end features, that very simplicity should appeal to users who want accessible power without a long training period. The program is capable of producing far more varied and stylish reports than an ordinary spreadsheet program, and it avoids the problems likely to arise when tables pasted into a word-processing document or another page-layout program need to be updated.

If Ragtime could make spreadsheet charts, it might be an ideal solution for the reporting needs of the growing hordes of Mac users in business. Without that facility, its market may be more limited. But for those who are willing to import or live without charts, Orange Micro's Ragtime is a very serviceable product.
— By Steve Cummings

CORRECTION

In a review of Bravo Technologies' MacCalc spreadsheet in our June 15 issue, MacWEEK erroneously reported that "a conventional 'cut and paste' directly from one cell to another does not work." In fact, this function does work. As the manual describes, MacCalc does not allow cutting and pasting from a cell into the entry bar or vice versa because the program maintains separate Clipboards for these two types of information.

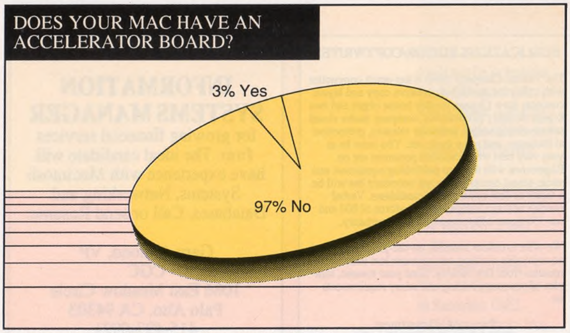
Focus: Accelerator boards

BY BILL LANGENES
Creative Strategies Research

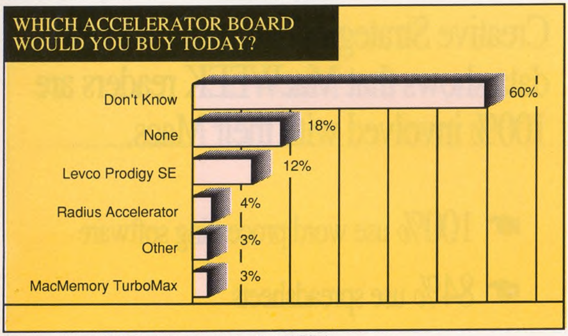
Accelerator boards are used by a very small percentage of Macintosh users, according to a recent MacWEEK survey. When asked if their Macintosh was equipped with an accelerator board, only 3 percent, or eight of the 300 Mac users questioned, said yes.

The telephone survey of MacWEEK readers working at locations where large numbers of Macintosh computers are used was conducted exclusively for MacWEEK in June by Creative Strategies Research of Santa Clara, Calif.

The main reason for the low number of accelerator boards in use is that until recently the boards were very expensive, with prices running as high as $8,000.



Source: June 1987 Creative Strategies/MacWEEK



Source: June 1987 Creative Strategies/MacWEEK

Large potential sales opportunity

Asked "If you were to buy an accelerator board today, which brand would you buy?" 60 percent of the 298 respondents said they did not know. This indicates that accelerator marketers have not established strong "share of mind" among Mac users. Eighteen percent of those surveyed said they would buy no accelerator board.

Among accelerator brands specified by respondents, the Prodigy board from Levco of San Diego, Calif., was mentioned by 12 percent; the Radius Accelerator from Radius of Sunnyvale, Calif., was mentioned by 4 percent; 3 percent specified the TurboMax by MacMemory of Sunnyvale, Calif.; another 3 percent would buy "other" accelerators; and one respondent — less than 1 percent — named the HyperCharger from General Computer of Cambridge, Mass.

The combination of three factors uncovered in this survey — few current accelerator users, more than 80 percent of Mac users indicating they would consider buying an accelerator, and general uncertainty over which brand of accelerator they might buy — all point to a sizable potential sales opportunity in the accelerator market.

The MarketWEEK survey is conducted exclusively for MacWEEK by Creative Strategies Research, a high-technology research and consulting firm based in Santa Clara, Calif. For this survey, U.S. corporate and other volume users were randomly selected from the MacWEEK subscriber database. Respondents were surveyed by telephone during June, and 300 useable questionnaires were obtained. The industries and geographical distribution represented in the sampling are reflective of general U.S. demographics.

CALENDAR

AUGUST

2-4 — **Recognition Technologies Users Association Exposition** (San Francisco)
Exposition on recognition technologies equipment, supplies and services, including telecommunications equipment, optical character recognition and image processing equipment. Contact: Robert Jakubowicz, (802) 362-4151.

5-7 — **The Seybold Group's Desktop Productivity Conference** (Boston)
Aimed at senior executives and upper-level managers interested in information systems, data processing, communications, corporate planning, finance and office automation. Contact: The Seybold Group, (408) 746-2500.

6-9 — **Extending the Human Mind: Computers in Education** (Eugene, Ore.)
Intended for educators, administrators and software developers, conference includes 56 special interest sessions, review laboratories, exhibitors and hands-on workshops for the Apple IIe and the Macintosh. Contact: University of Oregon Continuation Center, (503) 686-3537.

9-11 — **Spocad III CAD/CAE/CIM Conference** (Coeur D'Alene, Idaho)
Sponsored by Spocad, conference includes more than 50 exhibitors, and tutorials and panel discussions about products, new applications and market trends. Contact: Spocad, (509) 484-6812.

10-14 — **NCGA Computer and Art Design Conference** (Chicago)
Seminars and hands-on presentations for Apple, Macintosh and Amiga computers featuring graphics applications for the fine arts, including dance, theater and music. Contact: Toni Grainer, (703) 698-9600.

17-18 - **Datapro's Electronic Publishing: Strategies, Applications and Systems**
(San Francisco)
Two-day course aimed at corporate users on how to apply electronic publishing while boosting productivity and cutting costs.
Contact: Datapro, (800) DATA-PRO.

10-11 — **Apple Communications and Networking Conference** (Boston)
Two-day technical conference, including discussions of AppleTalk and AppleShare, and breakout sessions on communications development products from Apple. Contact: Apple Computer Inc., (408) 996-1010.

11-13 — **Mac Expo** (Boston)
Business, business programming, desktop publishing and desktop engineering interests will be addressed; desktop publishing and networking seminars. Contact: Deborah Paul, (617) 329-7466.

17-20 — **National Computer Graphics Association CAD/CAM Conference**
(Boston)
Exhibit and conference for educators, researchers and vendors involved in computer graphics. Contact: NCGA, (800) 225-NCGA.

31 — **Building Strategic Advantage Through Computing** (Chicago)
One-day seminar addresses the challenges faced by information systems executives and the business strategies behind information technologies. Contact: Digital Consulting Inc. at (617) 470-3880.

SEPTEMBER

3-5 — **American Institute of Graphic Arts National Conference** (San Francisco)
Intended for graphic artists, the conference will include sessions on technologies, history and educational aspects of the graphic arts industry. Includes film, slides and graphic art exhibits. Contact: AIGA, (212) 752-0816.

5 — **Suite 3D's Graphic Art Exhibition**
(San Francisco)
In conjunction with the AIGA conference listed above, the exhibition will feature the work of West Coast designers. Includes reception and hands-on demonstrations. Contact: Barbara Mehlman, (415) 882-7063.

9-12 — **The Seybold Desktop Publishing Conference** (Santa Clara)
This year's largest desktop-publishing conference, attended by 125 companies, will include seminars, exhibits and speeches by Paul Brainerd of Aldus, John Sculley of Apple Computer, John Warnock of Adobe Systems, Michael Tchong, publisher of MacWEEK, and others. Contact: The Seybold Group, (213) 457-5850.

14-18 — **Electronic Printer and Publishing Conferences** (Miami)
Sponsored by CAP International, the schedule includes an electronic printer conference and a computer publishing systems conference. Features product exhibits and panel discussions on new technology and marketing issues. Contact: CAP International, (617) 837-1341.

21-22 — **Datapro's Electronic Publishing: Strategies, Applications and Systems**
(New York)
See event listing for Aug. 17-18.

29-Oct. 2 — **INFO '87** (New York)
The Information Management Exposition and Conference, with the theme "Making Existing Information Systems More Productive," features three "focus" days on the subjects of financial service companies, manufacturing companies, and government agencies and departments. Conference also includes workshops, full-day courses and 48 sessions. Contact: INFO '87, (203) 964-8287.

Send calendar events to: Clair Whitmer, MacWEEK Calendar, 525 Brannan St., San Francisco, Calif. 94107.

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We dare you to compare

Creative Strategies' exclusive survey data shows that MacWEEK readers are 100% involved with their Macs.

- 100% use word processing software
- 84% use spreadsheets
- 82% use hard disk drives
- 76% use a Macintosh Plus or SE
- 72% use desktop publishing programs
- 69% have PCs in their workgroups
- 67% are connected to networks

For a copy of our complete market study, contact your local MacWEEK sales representative.

Business clicks with

MacWEEK

VERSACAD

Continued from Page 1

drawing regeneration also are provided.

Other features include movable tool palettes and resizable windows to take advantage of two-screen hardware configurations. Color-screen support for the Macintosh II facilitates multiple drawing layers.

VersaCAD's higher-level programming language, built into the PC product to allow third parties to modify the software, is scheduled to be available in a upgrade for the Mac next year.

"This introduction is very important to us," said Michael Homer, Apple's manager of business development. "VersaCAD has built up credibility in the marketplace ... This signals growing acceptance of the Mac as an engineering workstation."

For many users of CAD programs for the Mac, price will be a primary issue.

The many cheaper CAD packages will initially compete with VersaCAD/Macintosh Edition. They include Innovative Data Designs' MacDraft, Diehl Graphsoft's MiniCAD and Abvent's SpaceEdit, priced from less than $100 to about $500.

"A product like MiniCAD at $500 will prevail for smaller operations over VersaCAD at $2,000, especially given the enhancements expected for existing Mac packages," said Fred Stitt, editor of Guidelines, a newsletter about architectural production methods, and an organizer of CAD workshops for the Mac.

"Design professionals who use a software package daily in their practice are not likely to be concerned about a higher price tag if the features are there," said Creighton Nolte, a San Diego architect and Mac user. "Many Mac users will try VersaCAD just based on its reputation."

The impact on current PC VersaCAD users — claimed by VersaCAD to number 40,000 — is even more speculative. Months of speculation about PC products being made available for the Mac and their impact on CAD markets have preceeded VersaCAD's Mac introduction.

"PC users might add a Mac to their network for its versatility or even drop the PC if they want access to other Mac applications," said VersaCAD's Barr.

The biggest question for hardware vendors and software developers is the impact of VersaCAD on the Mac for new buyers of CAD systems.

"It will tend to bring new users to the Mac, especially for designers not sophisticated on computers and concerned with its ease of learning. The package will help legitimitize desktop engineering on the Mac II," said Barr.

"The combination of VersaCAD's good reputation, large installed base and the Mac's affordability for small firms will create a powerful impact," said Eric Teicholz, an architect and microcomputer consultant.

David Peltz, CAD industry consultant, said he views the issues differently: "The big difference between packages will not be in features or price, but in marketing. CAD systems are difficult for newcomers to evaluate. The companies with more resources will be able to merchandise more than the many small current CAD developers."

Additional speculation centers on whether AutoCAD — the No. 1 CAD package for the PC with a claimed base of 100,000 — will become available on the Mac.

"Until now, Apple hasn't had a viable workstations platform," said Al Green, president of AutoDesk Inc. in Sausalito, Calif. "Now, with the UNIX-type Mac, it looks like they do. You might see an AutoCAD unique to the Mac interface in the not-too-distant future."

Ironically, VersaCAD was originally developed on the Apple II as CADApple before it moved to the IBM PC platform. It has now come full-circle to bring a new dimension to the fast-changing Macintosh CAD marketplace. ■

3COM

Continued from Page 1

3+ Mac will offer transparent network services between PC and Macintosh environments located on 3Com servers, said Elaine Hanson, marketing manager for Macintosh products. It also will be AppleShare-compatible, allowing easier integration of existing Mac networks.

3Com intends to target the growing number of mixed Macintosh and MS-DOS environments, organizations that have large or increasing numbers of Macintoshes and the existing installed base of 3Com networks.

3Com expects to help sell Macs as well as networks, Hanson said, and analysts agreed.

"It is very important for Apple," says Paul Evans, vice president of S.G. Warburg, a San Francisco financial analysis firm. "The product is coming from a renowned vendor with an installed base of about 30,000 networks, and it is important for Apple to be able to hang in an IBM world."

3+ Mac is reportedly compatible with all Macintosh multi-user and network-aware applications. Hanson said this is due mainly to its use of Apple's file-handling routines. One 3Com server can connect Macs via AppleTalk or PhoneNet cable and PCs via Ethernet. Servers can be connected locally or remotely through asynchronous communications devices. AppleTalk and Token-Ring networks cannot coexist on the same server, although they can exchange information as though they were, Hanson said. Administration for the network can be executed from either a Mac or PC.

While 3+ Mac will be available soon, it will not be complete. Missing will be Ethernet support and 3Com's mail module, both of which the company hopes to release by late fall.

When Ethernet support is added to 3+Mac, both the Macintosh SE and Mac II will be able to use Ethernet cards from 3Com, Apple or Kinetics Inc., thereby increasing the network's transmission speed to 10 Mbits per second.

The elecronic mail feature is in development. It will offer PC-Mac mail handling and work with the 3+Mail gateways to MCI Mail and IBM DISOSS mainframe mail systems.

Users of existing 3+ installations will need only to buy the Mac module, while new users will have to purchase the 3+Share server software at $2,100, and a 3Server3, priced at $5,995. The product will be available only from dealers authorized by Apple to sell desktop-communications products. *— Jiri Weiss contributed to this report.*

FAX MODEMS

Continued from Page 1

of Hillsboro, Ore., and Microtek Lab Inc. of Los Angeles all have Mac scanners and modems in various stages of market readiness.

Microtek spokesman Bob Hsieh said Microtek will not announce its new Mac-compatible fax modem until after Apple releases its products.

The Apple fax modems will send documents directly into another similarly equipped Mac, where they will be saved as MacPaint or MacWrite files. Fax vendors offer a variety of new software for the modems that greatly increase its use, particularly for desktop applications. They include: gray scales, which offer the ability to break a document into 64 shades of gray; encryption, for the secret transmission of sensitive documents; store and forward, which delays sending a message until bargain hours for phone rates; and autodialing and multiple destination, which allow simultaneous distribution of fax messages to different cities.

Fax technology was developed in the United States during the 1940s. Experts say the fax market is shooting through the roof now because of technological advances that allow telephone transmission of high-resolution graphics at rates much faster and cheaper than overnight express.

"It's another example of Apple using graphics to achieve penetration of the microcomputer market," said Paul A.D. Evans, vice president of S.G. Warburg, a San Francisco investment bank. "The leverage for Apple is getting documents off the fax and producing them in higher quality than they are now. This is something that adds potential to an already strong market."

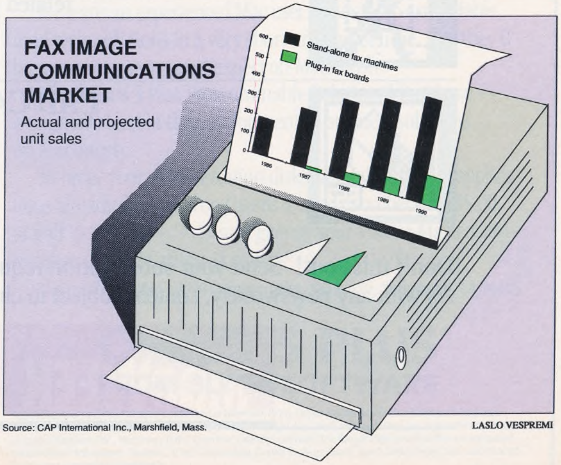
"I think Apple will do great because they have large distribution," said Don Ryan, director of image communications for CAP International, a Marshfield, Mass., consulting firm.

According to CAP, 191,000 new fax machines were installed in 1986, 300,000 more will be sold this year and 410,000 units will be sold next year. CAP said the worldwide installed base is 2 million fax machines.

The Mac products reportedly will transmit graphics under Group 3 compression protocols, the United Nations standard created by the Consultative Committee for International Telephone and Telegraph adopted in 1980.

Ryan distinguishes between stand-alone and plug-in fax modems. "The stand-alone market is growing because prices are dropping and office equipment dealers have created greater awareness of the product," said Ryan. "Plus, overnight services have created a general impression about the importance of quick delivery. Fax is even faster.

"There are 20-plus companies producing a facsimile plug-in board with modem," he said, adding that at least three are known to be Mac-compatible. "They allow a PC to send and receive bit-mapped data, including pictures and graphs you can't do with E-mail. You don't need to subscribe to a service the way you do with E-mail." ■



FAX IMAGE COMMUNICATIONS MARKET

Actual and projected unit sales

Source: CAP International Inc., Marshfield, Mass.

LASLO VESPREMI

MAC THE KNIFE

Some people are never satisfied. The Mac II is just not good enough for them; they want a ... no, wait, they couldn't call it *that*.

Let's just call it a Mac II Plus. As seductive as the Mac II is, it sure doesn't look like $150 million, and that's what Apple claims it spent on development. Looks more like maybe $30 million to this blade.

If that's true, then Apple spent $120 million on something else, and it wasn't a used Chevy either. What could it be now? Could it be a 20-MHz 68030 with a 60-Mbyte disk and color monitor standard for less than $10,000? Perhaps in your dreams, Emily, you can upgrade your Mac II to a II Plus with a simple board swap and major checkbook adjustment.

Just can't wait to hop up to that II? Hold on a while and you can use Levco's accelerator board for the Mac II ... double the speed. Or you could bring your SE to Boston and get Levco's 4+4.

Those clever guys at Atari seem to know more about the NeXT workstation than just about anyone. Maybe Atari already has the specs. But then again, Emily, you'd know a lot, too, if you had the Amiga hardware design team on you staff.

Meanwhile, the folks over at InfoMarkup-Land are pretty peeved at NeXT. Looks like the blessed workstation will be sold exclusively through universities, at least for a while. A 40-percent student discount would explain that $3,000 price tag that kept popping up all last week. Retailers just want to make margin.

Plenty of the machines are going to be sold if the company stiffens its legal upper lip and releases it running Mac software. Knife confidants have seen it happily hosting Mac programs under UNIX. We should know all about it by September's UniForum in New York.

Bootleg Jugglers are everywhere, Emily, complete with bootleg Finder 6.0s. Could this be the end of Desk Accessories as we know them? Sure, if you have 16 Mbytes of RAM. The rest of us will be content to hang out under the Apple menu a little longer.

Warning

Last week I warned you to not get too accustomed to System 4.1 and Finder 5.5, or B-52 for short. Expect a new version in another few weeks since federal regulators are about to force Apple to print "DANGER: UXB" on all system disks with the current version.

The truth can now be told department: Aldus and Cricket Software have joined forces to produce their first hardware product — an alarm that plugs into the LaserWriter and wakes up the user when the LaserWriter starts to print. The unit will be bundled with every copy of PageMaker and Cricket Draw. (Don't wait for a similar device for the Linotronic 100, 'cause engineers are having trouble integrating a calendar with the alarm.)

Programmer of the Year Award nominee: the genius who gave us EPSF (Encapsulated PostScript Format). Due to an error in marketing, most people think it's a print format for the LaserWriter, but it's really a sophisticated copy-protection scheme. It transforms the simplest 2-Kbyte MacDraw document into a 1.4-Mbyte monster, thus preventing duplication. Ingenious.

Here's a cute idea for those developers steaming over Claris: When the company goes public, why not band together and buy a controlling interest?

The ROM game

How many versions of the 128-Kbyte Mac Plus ROMs are there? Two, three, four? Does anyone really care? You might if you have one of the first 10,000 or so to roll out of Cupertino. Those are the ones that keep your Mac from booting if one of the SCSI devices isn't turned on. Tell Apple you read it here and demand a free upgrade. If you're firm enough, you'll probably get it.

How's this for a clever marketing idea: a run-time version of Excel. No Open ... or New on the menu, but it'll turn that hot profit and loss template you've been developing into a stand-alone application of sorts. It'll ship with Windows Excel first and then with the real Excel when Version 2.0 comes out.

The Knife hates to type, so he's excited about a certain new keyboard macro program. Those in the know are pretty tight-lipped, but the word is that it will blow Tempo out of the water. There's a long list of juicy features, including the ability to assign an application to an Fkey. Pretty cool, if you ask the Knife.

What was the 3Com truck doing at the Apple loading dock the other day? Are those Chocolate stains on your blouse, Emily?

***

A sharp tip cuts both ways. Call me at (415) 882-7370 or MCI (MactheKnife). My gain is your mug. ■

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